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NOTES

ON

DISEASES IN TURKEY,

AND

MEMOIR

ON THE

REMITTENT FEVER OF THE LEVANT.

LONDON :

PRINTED BY STEWART AND MURRAY, OLD BAILEY.

1854.

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DEPARTMENT MEMORANDUM.

THE following observations by Drs. Schulhof and Bryce will doubtless prove most acceptable and useful to the medical officers of the army in Turkey, to whose attention they are specially recommended.

When a desire was expressed to possess the results of their experience, in reference to some of the diseases of Turkey, both gentlemen responded with the greatest possible alacrity; therefore, I feel assured the officers of the department generally will join with me in thanking them for their generous and able services in the cause of humanity.

The extracts from the reports of Dr. Bryson and Mr. Drummond, Deputy-Inspectors-General of hospitals and fleets, are deserving of special attention, as there is reason to believe periodic fevers may be averted by adopting the practice recommended by Dr. Bryson, and cured, after having resisted other medicines, by the remedy which was resorted to by Mr. Drummond.

AND. SMITH, M.D., DIRECTOR-GENERAL.

*Army and Ordnance Medical Department,
June 15th, 1854.*



NOTES

ON

DISEASES IN TURKEY,

IN REFERENCE TO EUROPEAN TROOPS.

BY

MAURICE SCHULHOF, M.D.,

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, FELLOW OF THE
ROYAL MEDICAL AND CHIRURGICAL SOCIETY, MEMBER OF THE IMPERIAL
AND ROYAL SOCIETY OF PHYSICIANS AT PRAGUE, ETC., ETC.

NOTES

ON

DISEASES IN TURKEY.

THE following pages, which have been written at the request of the Director-General of the Army and Ordnance Medical Department, have not for their object an elaborate discussion on the *Ætiology*, *Prophylaxis*, and treatment of the diseases which prevail in and near the Danubian provinces, but are intended simply as a brief and practical outline of my professional experience as to some important differences existing between those countries and England in a medical point of view.

Taking the point where the Danube emerges from the Austrian territory as the apex of a somewhat irregular triangle, divided by that river into halves to the right and left, the portion of the Euxine which lies between Odessa and Bourgas may be considered as its basis, whilst the right side will be flanked by the high mountains of the Balkan from Servia to where they terminate below Varna, and the left by the less elevated branches of the Carpathians, which, running in a semicircular direction through Lesser Wallachia and Moldavia, taper away into the hills of

North Bessarabia. Greater Wallachia, South Moldavia, and South Bessarabia, which compose the left half of the triangle, present an immense plain unrelieved by a single hill. Being unprotected on three sides, this tract lies open to the S.E. wind, and also to the blasts from the N., N.E., and E., which, in the absence of any obstacle, sweep across and over the country on the right side of the river, until they are arrested by the lofty crags of the Balkan. The right half of our triangle is formed entirely by the province of Bulgaria, and bordered on the south by the Balkan. On the other side of this mountainous chain stretches the plateau of Roumelia southwards to the Dardanelles, the Sea of Marmora, and the Bosphorus, and eastwards to the Euxine between Bourgas and Constantinople. Partially open to the N.E. wind, it is chiefly exposed to the E., S.E., S., and S.W.

The Danube, after having broken through the rocky barrier at the apex into a flat country, henceforth flows through a wider channel, which is studded with innumerable islands of a clayey soil covered with brushwood, reed grass, and other water plants, and swarming with musquitos.

After heavy rain, but still more in spring when the snow melts away, the river overflows the islands and shallow banks, turning some parts of the country into swamps many miles in extent, which exhale a very pernicious malaria. Though neither bank is safe from this poison, yet, the left shore being so much lower and flatter, it acts with more intensity there, and renders such places as Kalafat, Rast, Jslasz, Turnul, Simnitza, Giurgevo, Kiernadsy, Cshokaniest, Kallarash, Futestie, &c., very unhealthy during that season. But most dangerous in its effect is the malaria around Cszernawoda, Hirsova, Baba-Dagh, Matschin, Tultscha, and other places in the Dobruzia, at the eastern extremity of

Bulgaria; the same is the case at Brahamou, Galatz, and throughout the Delta formed by the embouchures of the Danube. Nor is the generation of the miasma confined to the Danubian valley, for it is likewise bred by the "Limans" of South Bessarabia; along the shores of the Aluta and the Shyl in Wallachia; in the marshes south-west of Varna; those on either side of the Maritza near Adrianople; not to speak of others of lesser dimensions, and the numerous muddy brooks so frequently to be met with in Bulgaria and Roumelia, which emit a peculiar and offensive smell during the hot season, when they are constantly visited by buffaloes, which wallow in the mire with their muzzles alone above water.

Independently of marshes and swamps, I believe that the alluvial soil of Bulgaria and Roumelia, which, by proper cultivation, might be rendered as salubrious as it is fertile, contains within itself the elements of malaria, which, during the excessive heat, escapes constantly, to the surface through the innumerable cracks formed in the parched meadow land. The changes of the temperature and the seasons are rapid and sudden. The country between Jassy, in Moldavia, and Constantinople, lies between the 43rd and 46th degree north latitude, and yet the temperature ranges from the most excessive heat in summer to 39 degrees below freezing point in winter, and this, too, without the gradual transitions observable elsewhere. The spring, which is very short, is suddenly ushered in by warm breezes, which melt the snow and ice in very little time; the vegetable kingdom, which appeared extinct for many months, begins to germinate and blossom in a few days, and with the end of April every feature of the vernal season is nearly gone. During the summer months, again, there is daily a rapid fall of the thermometer towards the evening, by 15 to 19 degrees Fahr.

Ibrahim Bey, the accomplished son of his late Excellency Zaduc Effendi, with whom I made frequent and distant excursions, told me that in Roumelia the difference was sometimes greater still. The autumnal season begins towards the end of September with thick fogs and tremendous showers, which continue until the N. and N. E. winds, which blow hard in November, clear the sky, and make the atmosphere piercingly cold. I can myself furnish an amusing and instructive instance of these sudden changes, which occurred on the 4th November 1846. After four days' confinement in the quarantine at Giurgevo, the weather having been remarkably fine and cold all the time, I received an early morning visit from the inspecting physician, who came to announce my freedom. No sooner had he glanced at my toilette, which was somewhat more careful than usual, in prospect of some complimentary calls in the town, than he asked—"Are you sufficiently provided with boots, my friend?" I pointed to a few French boots, replying—"That I hated carrying much luggage." "You call this a boot?" shouted he, roaring with laughter, and, taking one of them between his fingers, he led me through the hall, where he had left a pair of overboots of extraordinary size, and opened the entrance door. To my amazement, I found that during the night the snow had already fallen many feet deep. Removal by means of a vehicle was out of the question, and I had to be carried on the shoulders of a powerful porter to the doctor's house, and wait five days before the journey to Bucharest could be attempted. The greater frequency and intensity with which some diseases occur in these provinces must naturally depend upon each and all of the circumstances which have been mentioned, as well as upon the natural productions, diet, occupations, and general mode of living of the population, which shall be referred to in their proper places.

Rheumatism prevails during and after the rainy season among the inhabitants of Bulgaria, nearest to the Danube, and more especially throughout Wallachia, where it assumes a serious character. It occurs also in spring, but with lesser intensity. In the latter country, where, in furtherance of some special object, my friend, Dr. Chevalier de Mayer, physician-in-chief of the Wallachian militia, gave me every facility of inspecting the military hospitals—free access to the civic hospitals being a matter of course—I saw a larger proportion of rheumatic diseases than I ever did before, or since. London comes only next. I had nothing like it at Rustschuck. To avoid repetition, I may state here, once for all, that this is not the only instance of the disproportionate occurrence of certain diseases in these provinces, separated only by a river. The cases which I thus examined, and those which I treated in Bulgaria, were generally those of acute and chronic rheumatism of the joints, frontal rheumatism, facial rheumatism, often affecting one side alone and very painful, and lumbago rheumatica. The class of individuals mostly affected were boatmen, sentinels, travellers, who had the north wind against them, or who rode on horseback during intense cold, and persons exposed to the rain for hours. Occasionally a Turk would send for me, after he had enjoyed a bath. Strangers ought to profit by the example of the inhabitants, who dress much warmer than we do here, and keep the head well covered. Besides the other well-known remedies, I found digitalis, the oxysulphuret of antimony, infusion of juniper berries, and application of tow, fumigated with those berries, of great use in some cases. In the Bosphorus and the Dardanelles, rheumatism frequently occurs in the spring, when the S. E. wind suddenly veers round to N. E., as it sometimes happens in Scutari.

Pleurisy will occur during the autumn, and also in the

winter, when the weather is very cold and dry. In spring a great many persons are attacked by it, in localities which are equally accessible to warm and cold winds, and which, by their situation, are favourable to a sudden change of the former into the latter, viz., Varna, Scutari, &c. The reason why the same cause, as before stated, will produce in one individual rheumatism, and pleurisy in another, must be familiar to every medical reader. However, I entertain some doubts as to the reported frequency of the latter disease at Scutari. It is more than likely that many cases of intercostal rheumatism, occurring in highly sensitive subjects, have been put down and rigorously treated for pleurisy, when a simple camphor liniment would have met the case. A fine "friction sound" is very soon heard, when the mind is already made up to find it. At Rustschuck I noticed cases of pleurisy in summer, among boatmen who returned late in the evening; and young persons who had lingered in the vineyards, and exposed themselves to the chilly night dews. They soon yielded to proper treatment.

The physicians of Constantinople, I am afraid, in such cases, use the lancet very freely. Independently of my objection to that practice in general, I sincerely believe that in Turkey it is fraught with mischief, as there is less to be feared from the synochal, than from the tendency to the torpid, character of the disease.

Inflammations of the *uropoetic* system, with their train of symptomatic, or residuary dropsical diseases; also idiopathic anasarca, ascites, and œdematous swelling of the lower extremities, are of great frequency along the Danube, more especially on the Turkish side of the river. Exposure to the heavy rain in autumn, sleeping in the fields, marching in the swamps, sudden check of the perspiration, &c., will cause these disorders.

I wish, moreover, to draw attention to the nephritic and cystic irritations caused by a great many vegetables of an acrid and pungent nature, of which the inhabitants of Bulgaria and Roumelia partake freely, and the acrid principle of which passes through the kidneys. Strangers ought to be cautious, until they get used to them by degrees. The cases are by no means very obstinate; and a judicious selection, according to the nature and cause of the disorder, from among diuretics, hydragogues, diaphoretic drinks, the tartrate of antimony, Dover's powder, hyoseyamus, conium, and dry warmth, will soon restore the normal state. The tiny hot-air bath apparatus, which we use in London, and with which I was not acquainted when in Turkey, would form a most valuable addition to those therapeutical means. Of course dropsies arising from enlargement of the liver or spleen, which are so frequent in marshy districts, and which are the usual sequelæ of ague, must be treated with due regard to their immediate cause. For these enlargements themselves, I generally found an ointment of the iodide of potash, and the internal use of quina, and more especially the decoction of taraxacum, of great service, nor have I had any reason to change this practice to the present day.

I take this opportunity to point out the advantage of avoiding, in that climate, the use of drastics, in dropsical or any other cases, wherever it is practicable to do so. There are already in the Turkish provinces too many agencies abroad, which affect the colon and rectum, to render the increase of their number by one of so powerful a nature a matter of small importance. To cure an evil, without laying the foundation for another, has ever been the prerogative and special province of true medical science.

Rheumatic Iritis, but still more rheumatic and catarrhal ophthalmia, are very common. Amongst other causes, I

chiefly noticed: the frequent rheumatic affections of the face and head; long exposure to the light reflected from the snow; the glare of the sun in districts where trees are scarce; the dust of neglected roads; sudden changes of temperature in the summer evenings; and, among villagers, the constant smoke arising from open fire-places, the burning of wood not sufficiently dry, and miserable chimneys. Strangers, from their head-covering, derive some protection, which the fez, the turban, and the high caps without brim, cannot afford. Many of the cases for which I was consulted had already become serious, through the applications of quack and amateur doctors of both sexes, whose existence there, to avoid giving offence at home, I will regard as one of the signs of the progress of Turkish civilization.

Concerning the treatment, I have nothing to say wherein it ought to differ from that adopted in other countries, unless it be that more than usual care must be taken in the purulent stage of the disorder. With the exception of purulent ophthalmia, in which I consider the use of mercury injurious, I invariably ordered a mild mercurial ointment to be rubbed morning and evening around the boundary of the orbit, some distance from the base of the eyelids. In violent nocturnal pain of scleritis, I added a few grains of opium to it. Moreover, in the earliest stage of rheumatic ophthalmia and iritis, a strong emetic was given to empty the blood vessels by muscular pressure. The benefit arising from these accessories to the rest of the treatment, and which were recommended to me by high authorities many years since, I consider to be very great. I have seen some cases of purulent ophthalmia in the hospitals of Bucharest, and treated a few in Turkey myself. I cannot too strongly recommend the application of argenti nitras, as suggested by the distinguished oculists of London

and Edinburgh. I only wish I had been in possession of the facts coming from such quarters when I was at Rustschuck. The few successful instances which came to my knowledge were not enough to silence my scruples, so great was my fear of injuring the eye. Only once I attempted just to touch slightly the ulcerated edge of the eye of a "faithful believer," but at his first shriek I felt as if I had committed murder. However, in Turkey this remedial agent will be found of great value in more than one respect. I stated before that purulent ophthalmia will require special care in that country. This is too important a point to be passed over slightly. That inflammation of the conjunctiva will appear more frequently, and with greater severity, among troops constantly exposed to some of the above causes; and that for this very reason even a slighter catarrhal affection of the eye will soon assume the puriform character, is self-evident; moreover, that, in any stage of the disease, an additional aggravation will arise from the crowded state of hospitals in a hot country needs no prophetic voice to foretell. But the evil does not stop there; certainly not in that climate. I believe there is not a medical man, whatever be his opinion about the contagious character of purulent ophthalmia, who will doubt the possibility, nay the strong probability, that under the excessive heat of the provinces on either side of the Balkan, the purulent discharge from the eye will acquire great infecting power, even granting that originally it did not possess it. And if such be the case, where is the safety of hundreds, not to mention larger numbers, unless the strictest precautionary measures are adopted? We have of course no control over wind, dust, and so forth; yet something can be done for the healthy, and with proper care the disease limited to the individuals who suffer under it. I should recommend the

soldiers not to use each other's towels when in barracks. This would go a long way; at all events one medium of communication would be stopped both in this and a kindred affection of the eye, arising from a cause which is the same in Western Europe, as it is in Turkey and all the world over. It is also desirable not to wash the face suddenly with cold water, when it is flushed with heat after great fatigue or long exposure to the sun. Even slighter cases of pain or inconvenience in the eye should be attended to without delay; and, if there be no special ward for diseases of the eye, an arrangement than which there could be nothing more desirable, those patients who are under treatment for conjunctivitis in its earlier stage, ought to be put into the least crowded wards, and where there are no cases of disease of a catching character, foul ulcers, or gangrene, whereby the supervention of the purulent stage could be accelerated. However, upon the first appearance of purulent discharge from the eye, the patient ought to be removed at once to a separate ward; or better still to a separate house, destined solely for cases of purulent ophthalmia. The nurses of such a ward or house ought not to wait upon other patients or healthy persons, until they have changed their over dress and thoroughly washed their hands; but the safest plan is, not to permit it under any circumstances. That such a ward ought to have its separate linen, instruments, &c., is clear enough; and also that visitors, if at all admitted, are to be cautioned not to touch the beds.

Though I am of opinion, that infection can only take place upon immediate contact of the purulent matter with a mucous surface, a sore, or wound, yet, and be it spoken in all kindness to both parties, so little reliance do I place, from long observation in various countries, on the discretion of either patients or nurses, that nothing short of the strictest regulations can

satisfy my mind on that score. Moreover, as the virulence and power of propagation of a contagious principle increases in proportion to the number of the patients, and their proximity to each other, only a small number of individuals affected with this purulent secretion ought to be kept in the same ward or house. Both immediate separation and division are required, to stop the further progress of the disease. The difficulty in carrying out this plan, whenever a large proportion of individuals are simultaneously affected, is far from being a valid ground for objection; inasmuch as that circumstance would be the very reason for making every effort to *dilute* the disease in the way suggested. No language I might employ can be too strong or emphatic to urge upon those in authority the necessity of using every means in their power, and not sparing any expense, to avert from the army an evil of such magnitude as the spread of purulent ophthalmia. These views are neither my own nor new, but the importance of the occasion will serve, I trust, as a sufficient excuse for the reiteration. This dangerous disease has so often broken out in military hospitals, since the return of the troops from Egypt under Abercromby, that every medical man is familiar with its treatment; and I would say nothing farther, excepting that, from personal experience, I prefer the lotion of nitrate of silver to an ointment of the same, and also that, whether there be chemosis or not, I should give a very mild ointment of iodide of potassium, instead of that of mercury, referred to above, to be used in the same way and for the same object, viz., to produce absorption of the effusion in the areolar tissue. I have of late years tried cod-liver oil to the eyelids when glued together, and have had reason to be satisfied with the experiment. It is soothing, and, I suppose, less liable to decomposition than salves; if the latter supposition be correct, it

would be of some importance in a hot country. I would, at all events, recommend it to my honoured colleagues as worth a trial, and shall feel happy to hear of their approval of my suggestion. In convalescence, I prefer giving bark first, and after a few days, small doses of quina, with ferr. sulph. The rheumatic affections of the eye prevail, I believe, in the left half of the triangle, and catarrhal ophthalmia on the Turkish side; moreover, along the Danube and near the banks of the Maritza, and a few other places similarly situated, swelling of the eyelids, and even inflammation of the eye, are produced by the bites of musquitos, which swarm about at night and disturb the sleep. For these bites honey is used with advantage. I am happy to learn that the Director General, at whose request I write, has honoured me by adopting my suggestion, and has sent to the East some thousand yards of muslin for night covers and bed-curtains. They will be found useful in various ways.

Coup de soleil will more frequently happen with an army of occupation, than with a quiet population, who smoke away the hotter hours of the day beneath the cooling shelter of a kaffaneh. The scarcity of trees in South Bessarabia, Bulgaria, and Roumelia, and the great distance of halting places, towns, and villages, will considerably increase the chances of an attack. The woody neighbourhoods on either side of the Balkan, cooled by the vicinity of high mountains, form an exception. Two individuals, who came under my care, met with a sun-stroke on their way up the Danube in an open boat. I treated the milder case with the cold douche on the head, the rest of the body being well wrapped up: it was a lingering case. The second, which manifested all the symptoms of acute encephalitis, was bled to syncope, and recovered in much shorter time.

An interesting and analogous instance, not of stroke by

the sun, but by fire, when encephalitis and ophthalmia were caused in an individual, who had remained too long in a burning house, occurred to me in Bucharest. As it was impracticable to open a vein, I applied at once forty leeches, some distance from the head, and kept up the bleeding until faintness ensued. The effect was marked and surprising. I am far from being an advocate of blood-letting, rather the reverse; but I am certain that, in cases like this and the preceding, blood must be taken in large quantity in *one* bleeding, and without delay. Life hangs upon a moment. Repeated instances of sun-stroke have been communicated to me by other practitioners in Turkey, so that a good supply of tents for a division on its march would be of service, and, at all events, protect against other inconveniences produced by sultry heat. That it is desirable to give such patients acidulated potations, clear the bowels by an enema, and empty the bladder by means of the catheter, hardly needs mentioning.

Boils occur oftener on the right than on the left side of the triangle, making allowance for the Wallachian hospitals. In time of war they will, of course, break out more frequently, especially among individuals of delicate skin like the English. Involving no danger, and of daily occurrence in this country, I should not have taken notice of the disorder in this pamphlet, but for a desire of expressing my opinion, that in their treatment, poulticing and cutting the tumour, however large, might be entirely dispensed with—an advantage which ought ever to be borne in mind in Turkish hospital practice when it can be obtained. I always found, that passing solid lunar caustic, made previously wet, round the furuncle, will soon cause it to die within the artificial boundary, and that tracing a cross over the surface of the boil will hasten its decay. Whenever the boil breaks open, it is quite

sufficient to dip the caustic into the hole once, and carry it round the edge of the abscess. This plan, supported by the usual internal treatment, will succeed with boils of the largest size, even when sloughing has already taken place. I regret I did not pay earlier attention at Rustschuck to the connection which I think exists between boils and the consumption of swine's flesh. I had ample opportunities for such an investigation by virtue of my appointment as physician to the four corporations of the Greeks, Armenians, Jews, and Turks, the latter two of whom abstain entirely from that food. However, when I first became interested in the question, it was too late to gather sufficient data to come to a satisfactory conclusion on the matter.

Pneumonia and *Bronchitis* do not offer, according to my opinion, any striking characteristics of difference, either as regards their proximate causes, or the course of their symptoms, from what we daily observe in this country—hence it would be quite out of the scope of this tract to say more about them than that, of the two, *Pneumonia* prevails in the left half of the triangle, especially with the wind from the N. E., as may be easily imagined; whilst *bronchitis* is more frequent in the right half, particularly in summer time, owing to the damp and chilly evenings after the excessive heat during daytime. The smoking of narcotic plants by means of the narghilé (water-pipe) in distressing bronchitical and asthmatic cough, will be considered by our medical men an improvement upon the narcotic inhalations proposed by some practitioners here.

Ague is a Turkish disease, *par excellence*; in England it is now-a-days quite a rarity; and unless one pays a visit to the neighbourhoods of Snaith or Horncastle, or some of the fens of Essex or Norfolk, there is very little chance of meeting with it. In this country the temperature is not sufficiently

high, and the land too well cultivated, to favour the development of that kind of malaria which is the chief source of intermittent fever. In the Danubian provinces, on the contrary, which are comprised in the triangle, as well as in Roumelia, there exist all the atmospheric and topographical conditions for malaria, and all the predisposing and exciting causes, which facilitate the appearance of the disease, such as excessive heat, a long summer, sudden succession of the seasons without preparatory transition, great fall of the temperature in summer evenings, night dews, damp air and fogs, rapid melting of large masses of snow containing vegetable matter, heavy showers, frequent inundations and formation of swamps, shallowness of the banks of the Danube and other rivers, an extensive delta, brackish water near the sea, especially on the southern coast of Roumelia, clayey soil in one province, alluvial in a second, volcanic in a third (*e. g.* near Philipopolis), a great number of water plants, rank vegetation, want of drainage and of cultivation in general, abundance of acidulous fruits and vegetables containing a large proportion of aqueous principles, and again others of an acrid nature, which none but natives can digest. This great variety of external influences, many of which co-exist in one locality, brings them necessarily into contact with almost all the important organs, which, standing in close connection with the nervous and the ganglionic centres in particular, form the channels through which these centres become pre-disposed to the action of the proximate cause of ague, *viz.* malaria. The chances of affection by, or escape from the disease, will therefore primarily stand in proportion to the more or less vigorous resistance which the mediatorial organs can offer to those external influences. Hence whenever, from want of caution, force of circumstances, or a naturally weak condition of any of these organs, their re-

sisting power is impaired, or, technically speaking, their receptivity increased, the liability to an attack becomes so much greater; for this reason fatigue of the muscles by over exertion, of the nerves by anxiety and fear, exposure of the skin to vicissitudes of heat and chill, &c., will, in an especial manner, expose those organs, and through them the nervous centres, to the influence of external causes, thus rendering the latter particularly liable to be affected by the malaria poison. From this it is evident, that, of all men, a soldier in time of war will be most exposed to attacks of ague. Excitement, sleepless nights, long and fatiguing marches, irregular meals, fasting, improper food, encampment in the open field, slight indisposition, &c., will be so many items against him. But though we cannot protect him against a shower, or shelter him from the burning sun, many expedients may be suggested whereby much may be avoided, or the unavoidable better borne. But to this we shall refer in its proper place.

In books the ague appears in spring and autumn, in Turkey all the year round, though by far more frequently at those seasons. I mention this solely as a warning against imprudence to those non-professional readers, who do not despise a well meant hint; and to medical men, that they may not relax in their treatment of the convalescent because the autumnal season is over; for a relapse is as likely in winter time as in spring or summer, and relapse from ague in Turkey is certain, if the treatment terminate too soon. Nobody of course will literally accept the theory, which places the quartan ague in the autumn, the quotidian and tertian in spring. In Turkey a large margin must be left for exceptions, at least I have observed all these types at either season, though I must admit that I have seen a larger proportion of quartan fever in autumn than in

spring. I cannot say the same of the quotidian and tertian ague. I am inclined to think that the season has not quite so much to do with the period of intermission, and that the latter is greatly regulated by the constitution of the individual, which *cæteris paribus* modifies the rhythmical return of the paroxysm, and makes it a quartan or a tertian. I come to this conclusion from the circumstance that all quartan agues which I had to treat, whether vernal or autumnal, had a decided tendency to torpor, and the quotidian to an inflammatory character independently of the season. This I can only explain upon constitutional grounds, and consider it, therefore, fair reasoning that if the constitution has an influence upon the tendency, it most probably has a share in the formation of the type of the ague. The same assumption furnished the reason why quartan agues appear in spring at all, and *vice versâ*. This, however, is merely a private impression, which can be of practical value only as far as it may perhaps indicate the kind of treatment which ought to be entered upon.

By paying attention to the premonitory symptoms of ague, it is quite possible to quell the disorder in its birth. Whenever there is headache, giddiness, oppression over the stomach, feeling of sickness, lassitude, stretching of limbs, yawning, it is well to inquire after the immediate cause, and act accordingly. An emetic of ipecac., if the symptoms occur soon after a heavy meal, or eating melons, cucumbers, &c.; rubbing the limbs with hot flannel, and camphor powder if after great exertion; friction with flannel, foot bath, Dover's powder, potations of tepid water flavoured with lemon juice, if the symptoms have been caused by rain, or a chill, were the means I generally adopted, together with a mild aperient of rheum, or rheum and senna, and two grains of quina four times in the day. The latter I continued three or

four days. Such and similar means will generally suffice to prevent a paroxysm of ague. The stages of Turkish ague are generally well marked. It is of the highest importance for speedy recovery, and especially in the quartan ague, because of its tendency to typhus, to shorten the cold stage; next to this, the hot stage of the quotidian and double tertian deserve greatest attention. I generally pursued the following plan:—In the cold stage the body was rubbed with warm flannels, and bottles with hot water or sand put in the bed (the hot-air bath instrument would again be of excellent service); internally, frequent potations of warm infusion of orange peel, warm lemonade, warm toast-water; in quartan ague, a few drops of the solution of acetate of ammonia occasionally, in a cup of a weak infusion of camomilla—mustard poultices to the lower extremities. I have seen the warm douche applied with good results. I should also think that chloroform given internally, in small quantity, would considerably shorten that stage. In the hot stage, if moderate, the patient was left quiet. In exorbitant heat, with flushed face and headache, a waterproof bag with cold water was applied to the head; internally, tepid lemonade and toast-water, and in very severe attacks an opiate. In the sweating stage the scanty perspiration was promoted by Dover's powder and warm drinks, otherwise the patient was left undisturbed. Great caution was enjoined with the change of linen. During the intermission the patient took twenty-four grains of quina within the day, beginning with the fourth hour from the termination of the paroxysm. If it disagreed, a lesser quantity was given, and supported by the following powder:—*Pulveris corticis salicis albæ* ℥ i. *Pulveris corticis aurant.* *Pulveris radicis acori* āa ℥ ss. *Sumatur omni quarta hora.* The bowels were kept freely open by rheum and senna. In irritable stomach, an occa-

sional enema. Light diet of pulpy and fluid consistence. Now and then an infusion of camomile, or radix acori. The latter I found extremely useful in quartan ague, with weakness of digestion. The acorus and the cortex salicis albæ are to be met with everywhere in Turkey, and are excellent remedies in ague. The trifolium fibrinum stands likewise in good reputation; I have not tried it more than twice. By this treatment the paroxysms became invariably milder, and generally soon left altogether, when the above powder, with gradually diminished doses of quina, were persevered in for a month or two. I never tried arsenic in intermittens, but I consider the plan which I adopted quite sufficient, especially if care be taken to regulate the dose of quina by the receptivity of the stomach; inasmuch as doses, which are not well borne, are rather hurtful than otherwise. That the patient must be particularly warned against errors in diet, exposure to draught, rain, heat, &c., is a matter of course. I have some objection to the use of buffalo milk for convalescents. I am quite certain that with a great many it did not agree. It is extremely rich in oleagineous principles, and if poured out of a cup, the latter will be found coated by an oily, sticky liquid. The inhabitants use a variety of things for the ague, amongst which pepper with brandy is the most in repute. These stimulating medicines are altogether objectionable. Various means have been proposed to prevent the ague. In Turkey they use amulets; Hahnemann recommends the billionth part of a grain of bark, others again advise repeated small doses of quina, and there are some who suggest quina bags, to be worn near the skin. Considering all circumstances, I must give the prize to the amulet.

The true prophylaxis of ague can only consist in the avoidance of deleterious influences; and whatever I may say on this subject, applies to the remittent and so-called con-

tinued fever of the Dobruzia with double force. The following, I believe, comprehends all that is required:—The dress ought to be warm and easy. Flannel is indispensable; even the inured natives wear it. Those who can afford the luxury of a silk shirt, will find it an excellent absorbent of the moisture of the skin. Exposure to the air during the early part of the morning, or the evening, is injurious; if unavoidable, the body ought to be wrapped in a large cloak, covering the face; neither is it prudent to sit or lie down on the grass, though it be dry, without spreading something underneath the body and feet. In the evening, and during the night, even that protection will be insufficient. Sitting in a draught, or at the open window, sleeping with open doors or windows, throwing off the bed-cover at night-time, putting the naked foot on the ground, unbuttoning the waistcoat, or taking off the coat or hat whilst walking, or the dress, immediately after returning from a march, are highly objectionable.

In the latter case it is expedient, when circumstances allow, to walk about in the room for a while, undressing by and by, and rubbing the skin dry with a flannel. Wet boots and clothes, however, ought to be changed without delay. In districts which are notorious for malaria, it is advisable to give a good shake to every article of dress, especially woollens, before putting them on. It is not wise to hang them out for an airing over night; daytime is preferable. Every change of linen is to be well aired. The practice by the natives of going to the well in the yard for a wash is certainly not to be imitated. Sudden transitions are as much as possible to be avoided, such as sitting down immediately after strong exercise, taking cold drink, or going at once to a cool place whilst the skin is perspiring or very hot. Simplicity in diet, and avoidance of strong

alcoholic liquors, are of highest importance. Regular hours for meals, if practicable, taking food in moderate quantity at a time and masticating it well, avoiding the habit of taking pastry, tea, &c., whilst hot, will greatly assist in keeping the digestive organs in good order, which is one of the safest amulets. To go out in the morning without breakfast, or in the evening many hours after a meal, is certainly prejudicial. During the first two months no kind of vegetable ought to be taken in a raw state. Vegetables containing mucilage will agree well with a little pepper added to them; those of an acrid nature and cucumbers are better not taken at all; neither can I speak well of baked kukuruz, which causes a great deal of flatulence. Pork in Bulgaria and Roumelia is not wholesome, and the meat of buffaloes is very tough, and requires a strong stomach. Goat and mutton is light and agreeable, and very good for a change. Game is excellent, and so is fish, especially a species of pilchard caught near Varna and along that shore. It is at all times advisable to take fruit with great moderation; the better class of the inhabitants follow this rule. Melons and plums ought not to be taken by strangers for a long time; pears and apples are less objectionable, but grapes are better still. A slice of a peach with a little pepper over it, or soaked in wine, may pass; dried figs, of which there is a great abundance, act as a mild aperient on the bowels, and are very suitable after dinner; nor is there any objection to the dulciazza, a kind of marmalade, especially if made of orange-peel, and taken in the morning with a cup of tea. Nuts lie heavy on the stomach, but a few almonds will do, and one bitter almond after a meal will be found as good a protective against ague as quina taken internally, or worn in a bag. In Wallachia less restriction in diet is necessary. The meat and vegetables are of first-rate description, and

the wine is excellent; fish is rather rich, and ought never to be taken freely.

There are very few individuals with whom the water of a foreign country agrees at first; such is the case with Turkey; and inasmuch as anything that disagrees predisposes for ague, it deserves consideration. In the swampish districts of the Dobruzia and the Delta the water is generally bad; however it must not be understood that there are no good wells in the villages and towns; but they are not sufficient for a large supply, especially upon a sudden increase of water drinkers, such as an invading army. On the south of the Dobruzia, towards the Trajan wall, and on the west of it towards Silistria, the water is good again. The water close upon the southern shore of Roumelia, *e. g.* at Gallipolis, or Enos Bay, is brackish; but a little higher up, sometimes only a quarter of a mile distance, it is sweet. As for the rest of Turkey, as far as my information goes, I believe there is not a place which has not good wells, and in some of the towns on the right bank of the Danube, such as Nicopolis, Sistova, Rustschuck, Silistria, which stand upon lime ground, the water is excellent. Again, on the roads which cross the country, wells are to be found every few miles distance; I tasted it myself on my excursions with the Pasha on the roads leading to Schumla, Tirnova, and other places, and found it very palatable. Between the rice districts in the north of Bulgaria and the Balkan, the water is likewise good. The bad water of some wells becomes only so by neglect, when they are left uncovered, and all sorts of animal and vegetable matter accumulate in them. I am sure, that where this is the case, it would not give more than a few hours trouble to clean them and keep them sweet, if soldiers should be located in such a place. There is, therefore, no necessity for filtering. I think that

in the bad districts they use stone filters found in the country; however, I cannot vouch for the correctness of my recollections on that subject. The following rules may be of some use. The first few pails of water drawn from a well in the morning ought to be poured away, before the water is used for drinking. A very few drops of brandy added to a tumbler of water will prevent any injurious effect it might have upon a foreigner. What I consider a better plan still, is to mix with the water a teaspoonful or two of the infusion of *acorus*, prepared either with cold or hot water, or with equal quantities of cold water and spirit of wine, or with wine alone. This infusion, especially the latter, is most agreeable and wholesome. By the addition of a little orange peel it gets a most delicious flavour. The warm infusion requires a few hours, and that with cold water or wine four days, before it is fit for use, and will keep for months. I cannot leave this subject without expressing my conviction, that those who are in the habit of taking brandy in larger quantity, a habit in itself injurious in malarious districts, may increase the injury by carrying it with them in vessels made of a substance, which allows of impregnation by *fuzel*, and I think that none but glass flasks will prevent that. This *fuzel* will impart its smell and qualities to every fresh supply of brandy, or any other beverage; and however individuals may get used to the former, they ought to be informed that there are few things in the world more calculated to undermine health, and, as far as Turkey is concerned, to predispose for *ague* and remittent fevers, than that very *fuzel*. I feel confident that the *fuzel*, created in the miserable bottle used by the Russian soldier, has been one chief cause of the heavy sick list in former years in that army.

Malaria, so productive of *ague*, is likewise the cause of

those dangerous fevers which, at the close of spring and in the early summer, absolutely reign in the Dobruzia and the Delta, and prevail to a certain extent on the banks of the Maritza. These fevers are very severe. However, there is a great deal of unnecessary apprehension about them in the mind of the medical public and elsewhere, which I deem it my duty to dissipate as far as I can by examining the grounds on which those fears rest. These fevers appear at the time when the swamps begin to dry up; the quicker this process goes on—that is to say, the hotter the weather is—the greater will be the number of persons affected, and the disease so much the more intense. Now that was exactly the case with the Russian army in 1829, which encamped in those regions just at the period of the greatest evaporation. Add to this the lamentable condition of the Russian soldier at that time, who, even according to their own accounts, is described as having been half clad, half starved, or living on the most miserable food; and the liability for attacks from malaria, according to what I have already stated, must have been at its height. Again let it be considered that the medical officers were altogether unprepared for the emergency, both as regards their store of knowledge and their medical stores, and the treatment may be easily imagined. Now, typhus and plague are very accommodating terms on occasions of such a mortality as existed then, which, although attributed to those diseases, I believe to have mainly resulted from a different cause; and however humane the feeling which induced the Emperor to shed tears over the loss of his soldiers, such sympathy might have been more beneficially expressed by supplying his army with medical men capable of forming a correct diagnosis; for I maintain that by a proper knowledge of the disease alone, not to speak of other means, the evil would never have

arrived at half its magnitude, and that the majority of cases were neither typhus nor plague, but febris remittens, the bastard child of ague, which, in its severest forms, appears as continued fever, which mostly attacked those Russian soldiers, and for which they ought to have been treated. Now, this memorable disaster of the Russian campaign has left a lasting impression, both upon people on the spot and abroad. Nor has the matter ever been fairly investigated. Medical and other travellers go by steamer from Constantinople to Galatz, and again from thence to some other distant station. They never spend a day in the Dobruzia or the Delta—a journey by land to the shores of the Maritza being quite out of the question. As the river is not navigable before spring, of course they will always arrive at the time of greater mortality, and hear it still accounted for in a manner which is tinged with those Russian recollections. It is by such reports reaching this country that the public have become alarmed ; but I would ask, what analogy can exist between the Russian army of 1829 and our noble division in the East, with ample provision of every kind, commanded by officers who take care of their men, and watched by an intelligent, well-informed, and indefatigable medical staff, to justify an inference from the former case to the latter ? We know that remittent fever is a severe disease, and that the intensity of the miasma in some places makes it particularly so ; but we also know that the one may be cured and the other escaped. Exaggerated fear and under-estimation of a danger are equally unprofitable. During my first interview with the Director-General, when, amongst others, this point became the subject of conversation, he fully admitted that the campaign of 1829 was not a fair ground to argue from.

Remittent fever occurs in almost every part of Turkey, as one would naturally suppose, inasmuch as it owns the same

origin as ague. Much milder in towns than in country places, it appears in its worst features during the early summer in the Delta, Dobruzia, and those parts of the country where there are large morasses. In severer cases, its intermissions are very short and indistinct, and soon cease altogether, when it is justly called a continued fever; very often the disease breaks out in the latter form at once. It is unfortunate that the term "continued fever" is also used for typhus. To prevent mistake, I wish to be understood, that in this paper the term is applied solely to a fever created by marsh-miasma, differing from remittent fever only in degree and intensity, just as the remittent fever differs from ague solely by shorter intervals, and those constitutional disturbances which arise from protracted paroxysms. Nor are there cases wanting of obstinate or neglected agues, which run into remittent, and terminate fatally with continued fever. In fact, it will depend entirely upon local circumstances, the intensity of the miasma, the constitution of the patient, the kind and duration of the exposure, whether the malaria produces the mildest or severest form of this class of disease. Nor does what we can learn, *de juvantibus et nocentibus*, contradict this supposition; for remittent fever did certainly improve upon judicious use of quina, just as ague did, nor can I imagine that much good can be done in the continued marsh fever without that remedy. For the sake of brevity, and also because in severer cases (and of such alone do I speak) there is very little difference between the remittent and continued fever, I shall speak of both under the same head. The main features of the remittent and first stage of continued fever, as far as I could ascertain from my own cases, and from trustworthy verbal communications by some Wallachian physicians, are:—Great general debility and depression; constant headache; flushed face; pulse soft, feeble,

accelerated; skin dry and hot, with occasional sweats breaking out over the upper part of the trunk; great oppression and distress over the precordial region; feeling of sickness; tongue moist, and covered with a yellowish coating; great thirst; constipation; scanty urine; a feeling as if the limbs were bruised; sometimes a look full of deep anxiety and distress, altogether peculiar; now and then a slight shiver, when the patient buries himself under the cover with a sigh — sighing is a very frequent symptom. One feature, which I well recollect, and which is quite the reverse of typhus, is, that the subjective heat, as felt by the patient, appears greater than the objective heat discovered by the exploring hand. The patient constantly seeks the coolest part of the bed, and feels gratified if anything cold is placed in his hands. In typhus, on the contrary, the medical man *feels* the “calor mordax,” whilst the patient does not appear to do so. The greater affection of the sensorium in the latter disease is probably the reason of this phenomenon. However, I would caution the reader against taking this symptom as a criterion between the two diseases. Farther observations must determine whether it is of any value. During the short intermission this feeling of heat greatly subsides.

If medical aid is called in early enough, the progress of the disease may be stayed. Care must first be given to the predisposing cause, such as checked perspiration, undigested food, by applying the appropriate means; then quina every second hour, and a draught of infusion of camomile and radix acori, with three or four grains of sal ammonia twice daily, and the bowels attended to by injections. Quina is borne far better than the above symptoms would lead to suppose. Removal from the spot where infection by malaria was received, when practicable, will greatly contribute towards recovery. Application of cold to the head, diluted

tepid drinks acidulated with lemon juice or the elixir. acid. Halleri, will be agreeable to the patient, and in harmony with the imminent second stage of the disease. The crisis generally manifests itself by perspiration of the whole body, which must be supported by beef-tea and other drinks. I have seen on one occasion the disease terminate in a quotidian with short paroxysms. But the most difficult and tedious task is to carry the patient safely through the state of convalescence, and I really believe that in hospitals these cases will do far better than they can in private practice. It is not often that the physician has the opportunity of seeing much of the first stage, as it is only of three or four days' duration, and the seizure generally takes place under circumstances which hardly permit the patient to be brought under medical care as soon as might be wished. Towards the close of that stage some nervous symptoms make their appearance, as increased debility, slight aberrations of mind, subsultus tendinum. These are the forerunners of the second stage, which is fast approaching, and indicate the necessity of some change in the treatment. Nature will do nothing in these cases by itself; if left alone, the patients invariably die. The following is an instance of the rapid progress of the disease, and likewise affords an illustration of the degree in which accompanying circumstances influence the severity of infection by malaria. At the end of June I was called to a gentleman of the Jewish persuasion, who had been below Silistria with a party of Gentile friends, to superintend the forwarding of corn to Galatz, which was stapled up near the shore. For a few nights they slept on the spot to guard their property. Nearly all of them got the ague in consequence, but my patient who, from religious scruples, had lived entirely upon bread and coffee for nearly a fortnight, was seized with violent continued fever. I saw

him forty hours after he had been taken ill, when alarming nervous symptoms had already set in. Fourteen hours later various parts of the body were covered with blackish spots, varying in size, some of them flat, and others a little raised above the surface. I could not help thinking that, had the man lived on more substantial food, he might have escaped with an ague or a milder form of fever. As soon as such nervous symptoms have become apparent, those of decomposition of the blood are not long absent, sometimes not more than eight or ten hours, as shown by the eruption of petechiæ of a dark colour, or large black spots as in the above case. These eruptions are accompanied by delirium, tympanitic abdomen, rapid sinking, gangrene; sometimes bleeding from the nose, and diarrhœa.

From these symptoms, and the locality where it occurs with greatest severity, it has been called—continued, petechial, putrid, gangrenous, or Dobruzia, fever. Though I had various remedies recommended, my confidence rests alone in *arnica montana*; but to have its full effect the flowers must be given in a decocto-infusum, with a little sesquicarb. of ammonia or sulphuric ether, for example, *R. Florum arnicæ, ʒ j, coque cum suff. quant. aquæ per ¾ horæ; cum decocto adhuc calente infunde, florum arnicæ ʒ j; stet in infusione per ¼ horæ in vase clauso. Colaturæ, ʒ vj, adde spir.aeth. sulph. ʒ j. Capiat ʒ ss. omni hora.* The extract of arnica is not of the slightest use. As soon as the nervous symptoms make their appearance, arnica ought to be given in some such form and persevered in, and the quina continued, though at far greater intervals, and in much smaller doses. The potations ought to contain small quantities of dilute sulph. or phosphoric acid, or elixir. acid. Halleri. If there is great diarrhœa, the radix arnicæ would be advantageously added to the infusion—gangrenescent places will often improve upon slight application of

caustic. By this mode of treatment, and support from strong nourishing beef-tea, I venture to say that the worst cases need not be despaired of, unless medical aid has been called in when it was too late, and when death will come on more or less rapidly, the whole duration of the severer forms being from five to twelve days. My opinion has been asked about the efficacy of Warburg's drops in this disease. I know that remedy by name, but certainly never heard it mentioned either in Bulgaria or Wallachia. Neither do I recollect that these drops occur in the Austrian Pharmacopœia, with which during my practice at Prague, Vienna, and Venice, I ought to have become acquainted. I have not the slightest doubt that they are good for something, as is the case with all extraordinary pills, tinctures, balms, &c. ; or the distinguished physicians, of whose prescriptions they are the mystified reproduction, would not have deserved their fame. *Quæ non fecimus ipsi, vix ea nostra voco.* At all events I never heard of them in connection with the Dobruzia fever. I believe what has been stated concerning the proximate cause, occasional return of slight shivers, state of the tongue, and deportment of the patient, will suffice to prevent this disease being at the outset mistaken for typhus. Whoever has paid attention to the helpless and prostrate posture of a typhus patient in his bed, *trunci instar*, will at the first glance discover whether the case belong to the one or the other. To enter into farther detail of symptomatology and treatment would be mere waste of time ; much must be left to the judgment of the medical man, nor can the most minute treatise ever supply this quality. In the absence of *p. m.* examinations to guide me, I preferred pointing out the most striking features that occurred to me, and shall be happy to learn that no grave omission has been made in the short outline which I have given.

Where there is ague, *dysentery* is not far off, the former predisposing for the latter by the disorders which it produces in the abdominal organs. Even a superficial perusal of the preceding pages will show that the exciting causes of this "scourge of armies," are extremely numerous: sudden fall of the temperature in summer evenings: protracted autumnal rains following great heat, &c. It will occur in spring, but chiefly in summer and autumn, in consequence of exposure in the swamps, sleeping in the fields, sitting on the grass late in the evening, or after free indulgence in cucumbers, plums, or imprudent use of drastic medicines, such as are contained in many patent pills. It appears under either form of *dysenteria mucosa* or *sanguinosa*; pain and tenesmus are considerable, and often accompanied by febrile symptoms. My chief object in referring to this disease is to draw attention to the great tendency to typhoid fevers which characterize it in Turkey; a circumstance especially important to those who are in the habit of treating it with leeches and calomel. The few severer cases which fell under my care did very well upon *pulvis Doveri*, friction of *oleum hyoscyami coctum* over the abdomen, light mucilaginous food, and keeping in an equal temperature. That the ague on one hand, and dysentery on the other, will leave behind them tokens of their visits by liver affections, every one will readily believe.

I have already alluded to my treatment of enlarged liver. If there are liver abscesses formed after dysentery, they are better not interfered with surgically, although they may be superficially situated; they will have their own way after all. *Peritonitis*, *Enteritis*, and *Colonitis*, I solely mention to warn against mistaking rheumatic affections, which are so apt in Turkey to seize the serous covering and muscular coats of the intestinal tube, for the above inflammations, which are

constantly occurring. Where they really take place, the typhoid tendency of these inflammations must again be borne in mind. From long experience in England and abroad, I feel convinced that many such cases are the worse for over doing ; and that a little patience in awaiting the effect of hot fomentations by decoction of poppies, and other most obvious means, will save much trouble, and many a life too.

Diarrhœa deserves notice chiefly on account of its frequency. Severer cases must be treated according to their proximate cause, which is very frequently some organic disorder. However, talking about treatment of alvine fluxes is dangerous ground, for even practitioners who would abhor empiricism in any other disease, patronize some "capital medicine," and will recommend it in diarrhœa, whatever be the pathology of the case. This is a professional weakness ; thus we hear in cholera of opium, pepper, chalk mixture, catechu, sulphuric acid, calomel, and the brandy bottle of course, which cause nothing but confusion and uncertainty in the management of a disorder, the treatment of which I consider both simple and easy. The impaired tone of the bowels consequent upon some of the foregoing diseases, and which is so productive of diarrhœa, will greatly improve, upon the use of infusion of camomile, acorus, the extract of chelidonium, or of centaurium minus. Good and dry boots are a chief desideratum ; and I also think that our gallant Highlanders will find it both useful and agreeable to imitate the native mountaineers, and take to their leggings. In fact, immunity from any of the above abdominal disorders, without due regard to those precautions which I have not spared in this paper, is impossible in that climate. The natives themselves, who are as hardy and inured as any nation in the world, are fully aware of this. In the tremendous conflagration of Bucharest, Easter Sunday, Old Style, 1847, when 10,000 and

more individuals were rendered houseless, the number of intestinal diseases caused by the want of shelter in one night was really enormous. I myself saw a great many such cases the following day. Those of my readers who may have the privilege of meeting with my much honoured friend, Robert Colquhoun, Esq., Her Majesty's Consul General, who I am sure will bear testimony to my recollections, may receive from him most valuable information, concerning the necessity of not trifling with the weather in those provinces. Self indulgence may not become a soldier, but equally unbecoming is wanton neglect of self in a true defender of his country.

I have seen two cases of sporadic *plague*, one of which occurred in Rustschuck. The particulars of this disease have been treated by some English authors in so masterly a manner, that it would be more than presumption on my part to say a single word about it. Still I would suggest to those who may happen to meet with a case, to try turpentine internally. The hitherto unsuccessful treatment of plague renders it quite consistent with my great respect for those distinguished authors, to make such a suggestion.

I should not think that *scurvy* will be very frequent among the English troops; neither do I suppose they will render themselves liable to the injurious effects of Opium.

Typhus and *typhoid fever* I notice solely on account of the foremost rank which they occupy in the annals of human disease, but not for any of those differences which alone form the subject of this paper. That the sources of these fevers abound in the Danubian provinces to an extraordinary degree is evident. The climate, after relaxing the constitution by enervating influences, not unfrequently changes to Scythian severity. By this change it may become the direct cause of such fevers, as well as produce them indirectly, by giving rise

to those serious disorders which dispose the system to the creation of typhus poison in the body. Nature, moreover, so prolific in its productive powers, uncontrolled by the care and diligence of the husbandman, exuberates in noxious weed and an ill-developed produce—thus adding to the evils of a capricious sky, where it might otherwise have mitigated them; and, lastly, as in this country the seed of the disease is fostered by misery and crime in the lower, and by the exciting and eager pursuits after wealth, distinction, and pleasure in the higher ranks, so will oppression and slavish fear, oriental indulgence, and total want of nobler aspirations, have a similar effect there. In fact, to produce typhus, the sky, the soil, and the folly of man, must contribute their quota.

The symptoms of typhus present a remarkable similarity in all countries. At least as far as my observation goes, it always exhibited the same stereotyped features, wherever I happened to treat it; the heavy showers in Turkey, the sirocco brooding over the lagunes of Venice, and the fogs and wretched courts and alleys of London, may aggravate, but they cannot alter its appearance. Though cases of typhus and typhoid fever occur frequently throughout the year, yet during autumn and the first two winter months they are greatly on the increase, both in Turkey and Wallachia. The rosy-coloured eruptions of typhoid fever appear at that season of a darker hue, as we often observe it in the mulberry-rash in the wards of the London hospitals. In the absence of autopsies I cannot but with some reserve repeat my opinion, that these fevers are not identical with the spring-fevers which I described before. At all events, the latter are caused solely by marsh-miasma, are not contagious, and yield to quinine and arnica, neither of which can be said of typhus fevers which occur at the same time or afterwards.

When in Turkey, I could not quite coincide with the treatment generally adopted. Some practitioners were even in the habit of giving tartrate of antimony in the beginning of the disease. When I passed the clinical examination for license of practice in Bucharest and Wallachia, I urged my objections to that plan ; and in honour to the president and the members of the examining body, I must state, that they left me quite at liberty to follow my own views. What I observed before concerning the similarity of the essential features, applies as well to the treatment of those diseases. I cannot conceive of any difference.

The other day a medical officer proceeding to the East, asked my opinion respecting the best treatment of typhus in Turkey. I recommended him that which he considered the best in England. Whilst in marsh-fever medicinal interference alone can do good, in typhus such is not the case. No disease requires more judgment and tact on the part of the medical man, and less medicine, than typhus, whether in London or abroad ; it is by many little things that he carries the patient through, and I feel satisfied, that since the search for a specific has cooled down, mortality has wonderfully decreased. I gave in Turkey, ammonia, camphor, strong beef-tea, and the best red wine I could get ; and, with the exception of camphor, I have not changed this bill of fare to the present day. In one of our metropolitan hospitals brandy has been proposed. I tried it repeatedly in the Royal General Dispensary and in private, but returned to port wine, using brandy solely when symptoms of extreme faintness are coming on. In parotid swellings I ordered warm fomentations, with bags containing powdered camomile, and camphor rubbed on the surface. Ulcerations of the tonsils, which occurred in typhus, I treated with a weak gargle of diluted sulph. acid. Both applications generally answered well. In

hospital practice, it is necessary in those provinces to allow as large a space as possible between the beds, and to avoid poulticing whenever the object can be attained by other means. It may be as well to mention, that a forced march, or a draught of cold water taken when the body is very hot, have often been followed by an attack of typhus fever.

I cannot close these remarks without an allusion to the most productive, though quite accidental, cause of typhus fevers. I refer to war. Its baneful influence in increasing these diseases was well known to earlier medical writers. Thus Huxham speaks of "*Febris bellaris*." The same is acknowledged by modern authors, and corroborated by the typhus epidemic raging in 1812, 1813, 1814. But whilst medical research furnishes us with the statistics of these melancholy facts, our minds are relieved from anxiety by the assurance, that the disease will carry terror and death into the ranks of a disheartened and retreating foe, but that a victorious army will have its strength recruited, and its health restored, by the laurel's verdant leaves.

In conclusion I beg to make the following general observations:—With the exception of Lesser Wallachia the roads throughout European Turkey are very inferior; during winter and in the beginning of spring they are often quite impracticable. In Bulgaria the main roads run between Varna, Silistria, Schumla, Trnova, Turtukai, Rustschuck, Nicopolis, Widdin, &c.; these places communicate again with smaller localities by very indifferent highways. Considering the great difficulty of transit, hospitals ought to be established in those towns only which command the easiest communication. Among these the towns on the western shore of the Euxine, such as Varna, Bourgas, &c., will be constantly accessible. Next to them come the towns just mentioned, which are comparatively healthy. The low

situation of Widdin is rather against it, but half a mile south the air is good. With the exception of Schumla and Trnova, all these places are situated on the right bank of the Danube, and have the advantage of navigation during the greater part of the year. They are much healthier than the localities on the opposite shore; but below Silistria it would not be advisable to establish hospitals at all, unless for the most cogent reasons. For a *depôt-hospital*, Rustschuck commands greater advantages, than any other place. It is very healthy, has a large population, and offers ample accommodation; it is, moreover, easy of access even for vessels of 500 tons burden, and lies opposite the important Wallachian town of Giurgevo, which, being in a direct line with Bucharest, renders it an important place for provisions. Rustschuck is likewise the nearest frontier town to Schumla, and draws supplies of every description from Trnova and other places which flank it to the right and left; and as it is situated on the main road of the land route between Constantinople, Adrianople, Schumla, and Bucharest, and is one of the principal stations of the steam navigation on the Turkish Danube, the facilities of transport are greater there than anywhere else. In case of need, some of the smaller localities situated on the above mentioned main roads, *e. g.* Bashardshick, might be eligible for temporary hospitals. In Roumelia, Adrianople is certainly the most convenient place for hospital purposes. By a tolerably good road it communicates with Constantinople, by another with Schumla; and the Maritza, which is navigable by small craft, connects it with Enos Bay. The Russians were encamped in 1829 some distance below the town, and there, of course, they suffered; but Adrianople itself is healthily situated, and has a good supply of water.

It is most important, that with the exception of hospitals

established on the sea coast, all arrangements should be completed before the setting in of winter. The erection of wooden hospitals for temporary use would be both cheap and easy; the Turks understand the lighter sort of carpentering very well. Mats of reed are excellent coverings for the floor, and can be got anywhere; nor is there a scarcity of rough and strong carpeting. Mattresses can be extemporized by means of dry *kukuruz* (Indian corn) leaves. There is an ample supply of material for whitewashing, which has, in Turkey, many advantages over the process of painting. A good supply of portable iron-bedsteads will be found indispensable. Every hospital ought to have one or two very light waggons, as the roads are unfit for heavy vehicles. There are, in nearly all the larger towns, German waggons, who are capable of constructing and fitting up these light vans. They generally understand mattrassing also; but the supply of cow or horse hair is far too small, even for the usual home consumption; on the Wallachian side, on the contrary, there is no lack of that commodity. The bread is hardly fit for hospital use; nor are there any good bakers, except at Constantinople and Bucharest. A few bakers and one or two millers might be advantageously attached to the army. There is, likewise, a great scarcity of persons who understand the washing of linen; soap is horrible, and candles not much better; and, as I am on hospital necessities, I may state that leeches are very cheap and good. Considering the density of the population, the narrow streets, and the want of arrangements for the removal of filth in Turkish towns, the selection of a site for an hospital becomes a matter of great importance. However, there are, in most of these towns, some large buildings which could be appropriated, and by means of whitewashing and other cleansing processes, rendered at once fit for use. Where it

is necessary to erect wooden hospitals, the outskirts of towns should be preferred.

Cleanliness can nowhere be depended on, if we except the Armenians, the better and middle classes of the Jews, and the Turks. Some caution ought to be exercised respecting the condition of the cattle bought in the country for meat. In Wallachia and Bessarabia the murrain is frequent among horned cattle; other diseases again occur among the cattle on the right side of the river. In those places, where cattle for the daily supply of the garrison are to be slaughtered on the spot, Jewish slaughterers would be a great acquisition, as they are more competent than others to judge the healthy condition of an ox, sheep, or goat. I likewise conceive, that the Jewish method of salting the meat after slaughtering is, on sanitary grounds, worth consideration. I am also sure I shall not be wrong in recommending the Turkish Jews for any purposes connected with the commissariat, or in mercantile dealings generally. Some honest and intelligent men of this race, however few, are sure to be found in every town. In fact, the scanty stock of conscience and honesty existing in Turkey, may be entirely divided between the Turks and such Jews; but as the former possess no energy, I consider the latter the only individuals who combine business tact with rectitude of principle—a quality of no small importance in a country, where selfishness and deceit are at their height, and the art of dissimulation carried to perfection. In no country has the stranger greater need of energy and decision than in Turkey. The Turk, with all his good parts, is the victim of his procrastination. Suppose a medical officer should require the smallest sanitary process to be carried on, he will never see the beginning of it, unless he looks after it himself; the invariable reply, “*Bacalum!*” will

satisfy the Turk, and there the matter ends. To wait until a thing is *done* by him, one may wait long enough "*Rusticus expectat, dum defluat amnis.*" At all events, the medical officer will have the consolation that *no one* will interfere with any regulation, which he may be willing to carry out himself. But for this indolence, for some dogged prejudices which it will take half a century to break down, and occasional fits of the cruel disposition of the Osmanlis of yore, not to mention their crotchet, that every perfection of the "Giaour," whether English or French, has been created for the express use and advantage of the happy Mussulman, the Turks would be an amiable nation. I would record on this occasion the great kindness, shown me by his late Excellency Zaduc Effendi, whose physician I was, as well as by both his sons, Ibrahim Bey and Achmet Bey, the latter of whom, I am afraid, is the young hero of that name who fell last month, in an encounter with the enemy. Whoever may survive of that amiable and kind-hearted family, may rest assured that I shall ever retain the most grateful remembrance of the time which I spent under their father's roof.

Comparatively speaking, Wallachia possesses many more, though not less dirty towns than Turkey. The roads are in a better condition in summer than they are on the opposite side, but the snow in winter, and a regular quagmire in spring, greatly impedes the transit; however, the more general use of horses there, instead of bullocks as in Turkey, gives at all times a greater impulse to every kind of communication. Well arranged hospitals, of considerable size, are established in various parts, with every facility of organizing many more; and a more regular supply of medical, and the usual European, comforts can be depended upon. Although civilization may be, perhaps, one inch in advance of Turkey, yet the masses of the Wallachian population live in ignorance and

brutalizing dependence. The education of the Bojars and a few wealthy individuals, consists solely in a refinement of selfishness and ambiguity of character. To understand the latter, is to know more than the Wallachians themselves. Russian intrigue has impoverished the country, and undermined every principle. But an uncorrupted remnant breathes still the mountain air; and one day the Wallach may be himself again.

Although these few remarks, on Wallachian and Turkish nationality, do not entirely correspond with the main object of this paper, they may still be of some use to medical and other readers; moreover, I deemed it right to use my prerogative on an occasion which was not of my own choosing. The few short notes in my diary, which refer to my practice in the East, were never intended for publicity; and that period of my medical life has receded long ago into the back-ground of dim recollections before the pressure of daily duties.

In accepting, therefore, the request to dot down my experience in those provinces, far from consulting my own inclination, I followed solely what I conceived a call of duty; for, as I am probably the only English physician possessing personal knowledge of the country, I considered that this knowledge, however imperfect in itself, and however deficient my talent of conveying it, was public property, the moment it was asked for. The same consideration has entered into the plan of the whole. My remarks were made on one hand in reference to our army, composed of men in the prime of life; and hence everything applying to individuals of other age and sex, comprehending nearly three-fourths and the most instructive part of my practice, was carefully omitted, however great the temptation might have been to make use of it; on the other chiefly to medical men, who are perfectly con-

versant with every department of practice. I, therefore, have not referred to the usual methods of treatment, nor, with one exception, to the description of disease, but only to some salient points of difference between the diseases of the two countries, and to other matters, which may not be universally known. The difficulty of joining together these points and hints, varying in magnitude and importance, was greater than giving a detailed account would have been. It really became a question of arrangement and package.

Having said so much in vindication of this paper, my only duty now remains, to express my thanks to the Director-General, for the kind and courteous manner in which he received my remarks, and requested me to arrange them in this form; and, while in responding to that request, I have embraced the opportunity afforded me to do my part in promoting the well-being of our noble troops—a duty to which every high-minded citizen ought to be alive—I have performed my task under the conviction, that “*the race is not to the swift, nor the battle to the strong,*” but that safety rests with *Him* alone, who will grant success to the righteousness of our cause.

7, Suffolk Place, Pall Mall East,
May 1854.

MEMOIR

ON SOME SPECIALITIES IN THE

REMITTENT FEVER

OF

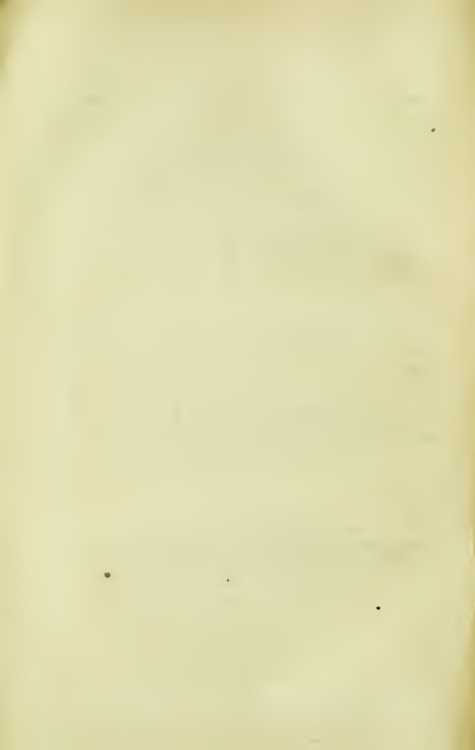
THE LEVANT,

OBSERVED BY

CHARLES BRYCE, M.D.

SOCIO CORRISPONDENTE DELL' ACCADEMIA DE' LINCEI DI ROMA.—FELLOW FAC. PHYS. AND
SURG. GLASG.—AUTHOR OF "ETIOLOGY OF FEVER," "STRICTURES ON VARIOUS
OPINIONS ON THE REMOTE CAUSE OF CHOLERA," ETC., ETC.

IT IS NO SHAME NOT TO KNOW THAT WHICH ONE HAS NOT HAD AN
OPPORTUNITY OF LEARNING; BUT IT IS DISGRACEFUL TO PROFESS
KNOWLEDGE AND REMAIN IGNORANT.



MEMOIR

ON THE

REMITTENT FEVER OF THE LEVANT.

THE writer has for object, in what follows, to state some specialities observed by him in respect of the sources, nature, and treatment of the remittent fevers which prevail in Turkey and on the shores of the Levant. The extent of time and country over which his observations were spread, and the similarity of the circumstances in which his experience was gained, may give to both, at this period, the only value which can justify their reproduction for the perusal of the Medical Staff of the expeditionary army serving in the East.

In the discharge of this duty, undertaken at the suggestion of the Director-General, Army Medical Department, his idea and aim have been to write up to and for military practitioners placed in a new scene, with minds well instructed by study of the admirable pathological museum at Chatham, and with a full knowledge of therapeutic agents at Fort Pitt Hospital. Even such may advantageously, perhaps, bestow an hour on the notes and reminiscences of a predecessor, who tried to comprehend the treatment of a formidable disease,

unbiased by the dogmas of the schools, or the doctrines of systematic writers. Their self-confidence may be guided, it certainly will not be weakened, by the cautionary precepts which it will be his privilege to inculcate.

The prefix remittent is sufficiently precise and comprehensive to designate the fever of Turkey, to which the following observations apply :—

All names, as mild, simple, bilious, inflammatory, malignant, are purely conventional, serving systematic writers rather to denote degrees of severity and alterations of certain features, than to distinguish constant specific varieties of marsh fevers. And first as regards the sources and conditions in which the fever originates and spreads.

Previous to the year 1828, the people of the country around Macris, a considerable town in Asia Minor, opposite Rhodes, were periodically visited by vernal ague of a mild character. But it happened in this year, that the fever acquired suddenly an alarming virulence and mortality, so as to give rise to the belief that the plague had come among them. I had, in the summer of the year named, sought repose and health in Rhodes, but, afflicted by the daily reports of the fatal character of the disease at Macris, and struck by the circumstance that no case of it had appeared in Rhodes, in spite of the free intercourse with the infected locality, and of the numbers of persons who had fled to the island for safety, I pushed across to the continent for other purposes than to view its Roman ruins, or read Greek inscriptions.

Macris is built at the foot of a semicircular range of hills near the sea, and looks down upon a large open plain, in which the hill streams discharge themselves and stagnate. There is in this way formed an extensive swamp down to the walls of the town, on which cattle are pastured in the dry

months. In its immediate vicinity stands the burying place, thickly grown over with the cypress. I found that all the Greek and Jew inhabitants who could flee had left, but the Mussulman apathetic, yet apprehensive, abided in and with his assuring "*kismet*."

The disease had, indeed, acquired a fatal range and intensity. Still, its remittent type, in the majority of cases, clearly stamped its dissimilarity from the plague, which I had just left ravaging Cairo. On investigating the circumstances in which the unusual form of the endemic might be supposed to have its source, I ascertained that the Governor of the district had ordered all dead camels, horses, dogs, and other offal, to be deposited in the marshy place described. Of course these were left uncovered by soil. The fact that the virulent form of the fever had first appeared among the people most contiguous to this locality, was decisively traced. It was also observed that the evening sea breeze passed over the swamp on its way to the interior. The probable coincidence of effect and cause was then instantaneously comprehended.

The high, almost revered estimation in which the Asiatic Turk holds the English Hakim Bashi, was effectually appealed to. He was beseeched to do, and ordered to be done, as he pleased, and the first use he made of the license was to effect the burning and burying of the animal remains; within a fortnight after this proceeding, and without any other appreciable physical agency, the fact of the control exercised over the occurrence and deadliness of the distemper, was demonstrated. My notes state that while the cases of fever occurring after the destruction of the animal matter assumed a milder form, the old ones became more amenable to treatment. The plague was subdued. It has never been my lot to witness and receive from Mussulmans a more pleasing

recognition of the power of the physician to stay the hand of the destroyer.

I reproduce the incident of Macris at the outset of this memoir, not more for the significant finger with which it points to one element of febrile miasm, changing the type and aggravating the force of marsh fevers through an agency then undervalued, or not recognised by the majority of writers, than because the occurrence first led me to the close investigation of the subject in hand. Moreover, the experience then enables me to better appreciate now the admirable opportunities that the army medical officer in the East will possess, in order to study and expound the true etiology of its remittent fevers—a duty which still waits performance. Let the incident further serve at this time to furnish some slight materials for argument and illustration.

To unfold the ultimate causes why marsh miasm and other aëriform products of vegetable and animal decompositions, are essentially febrific, is beyond the scope of medical science. We state the fact of the existence of a pyrexial miasm, and content ourselves with the investigation of its mode of action. And we denominate these causes though their origin be unknown, and in logical strictness they must be considered simply effects of remoter agencies into the nature of which no analysis can penetrate. All that philosophy can do is to declare the relation subsisting between cause and effect, and this not as an object of nature, but as a form of thought so understood. I shall speak of specific types of fever as resulting uniformly and exclusively from divers distinct sorts of paludal emanations. In this sense intermittent and remittent fevers of various types ought not to be regarded as constituting only a single malady, though all are engendered from the same general source, differing

merely in degree of mortality. Each ought rather to be thought of as the offspring of a distinct specific poison; and this is true, I apprehend, even of varieties of continued typhoid fevers.

Now, keeping the case of Macris and this hypothesis in mind, the practical questions in relation to our immediate subject are these. (1.) Are the sources whence camp fevers spring of a different specific constitution from those giving rise to the various forms of ordinary intermittent fever? and (2) if so, whether it is useful, as respects military *hygiène*, to discriminate betwixt these sources. The immense difference in the respective fatality of the two forms of fever, and the relative influence of the one and the other over field operations, raise these questions above the sphere of mere speculative theses, and inspire their suggestion to those who have been intrusted with a safe solution.

The experience of army medical officers, being the result of observations on organised masses of men in very dissimilar places and conditions, ought to be the most valuable testimony that can be brought to bear on these questions. It is doubtless very discouraging to know the little progress hitherto made towards their satisfactory answer by this favoured class of observers. Nor are their *confrères* of the naval service more advanced. Indeed, no mental labour can be more irksome to the ingenuous mind than the attempt to reconcile the contradictory statements of fact and of phenomena vouched for by medical authorities in both services. The toil of Sisyphus and his reward.

Having, in 1832, placed before the profession my views on the etiology of fevers, I shall here merely repeat the following propositions then fully argued and attempted to be proved.

1st. That intermittents are generated by emanations of

which the decomposed elements of *vegetable substances alone* constitute the predominant febrile miasm.

2nd. That simple remittents have their source in the emanations of decomposed *vegetable* and *animal* substances under certain auxiliary circumstances.

3rd. That malignant remittants, with a typhoid complication, originate from a miasm in which *human effluvia* are necessarily and largely combined with the compounded elements of decomposed animal and vegetable matters.

My reasoned conviction is, that these three forms of fever have as necessarily three distinct poisons for their primary production, as that they naturally possess three specific pathological types. I can, however, here only glance at some of the grounds on which this statement is founded.

Regarding the *first* of the propositions, it receives a pretty general assent of observers, and its accuracy, therefore, need not be enlarged upon. As respects the *second*, it seems established, also, that dead animal matter and *exuviae*, in certain conditions, give out exhalations which contribute essentially to the morbid properties of those resulting from vegetable decomposition alone. Indeed, few observers have denied, however diversified their explanations of the fact, that vegetable and animal effluvia combined, are the most powerful agents in spreading the *materies morbi* in endemic fevers. The *third* proposition will have to be noticed at some length in the sequel.

In the mean time, let me invite the reader to go back with me to Macris, for an example of the manner in which I conceive these three miasmatic states are successively produced, and manifest their activity. There we saw the indigenous intermittent converted into a remittent soon after, not to say consequential on the adventitious addition of the elements of putrescent flesh to the ordinary marsh miasm; and this re-

mittent again, not merely intensified in deadliness, but its specific character likewise altered after a time in the more crowded parts of the town, by the further addition to the pre-existing *malaria* of the morbid emanations from sick and dead bodies.

It is for others, placed in similar circumstances, to show wherein I erred in my search, and detection of the source and agency of the immediate causes to which I have imputed the aggravation of the ordinary fever of Macris. Because of my conviction of the justness of the inference and its importance, I dwell upon this transition of one form of endemic fever—simple, curable, and, humanly speaking, controllable in its deadliness—into another, wherein medical science, zeal, and skill, are of little force in contest with the individual case, but wherein the same professional attributes, supported by an enlightened appreciation of them on the part of the military authorities, can triumphantly struggle against and vanquish the insidious foe in its aggregate form and action. I hold it for a principle, and a fact, incontrovertible as important, that the most virulent fevers can be effectually restrained in violence and diffusion, by means which practical medicine has pointed out. These means are two-fold—one the removal or mitigation of the aggravating circumstances, as was done at Macris; the other and better, flight from the sphere of the malaria, shunning the places where the malignant fever is declared to exist. Military writings abound with instances, where the General has proved himself the true physician in seasons of dismay and pestilence, by the prompt removal of his encampment.

The records of our naval service, likewise, afford many similar illustrations. An instructive one of the kind happened on board the *Hellas*, flag-ship of Lord Cochrane, in the Greek Archipelago. In the summer of 1827, cruising

off the Morea, we encountered weather sufficiently rough to cause the closing of the main deck ports for three days. A great deal of rain fell too. The capote formed the dreadnought by day, the blanket by night, of the native crew of six hundred. A few days after the clearing up of the weather, the temperature high with a calm, dropping cases of inflammatory remittent fever appeared among the men. Sagacity to detect on the instant the cause of this sudden outbreak was wanting by me; and it was not until eighty-three persons had been struck down in less than a week, that I seized upon the source of our visitation, and was taught a lesson which instructs me now. Bad smell from bilge water, and its daily increasing offensiveness, first directed inquiries to this possible source of evil, and, fortunate in a commander, whose rare philosophic spirit is only equalled by his naval achievements, I was enabled to institute a thorough overhauling of the lower regions of the ship. On the cable tier, immediately under the main hatchway, was found a layer some inches thick of biscuits, olives, fish-bones, pieces of salt and fresh meat, &c., the remains and refuse of the men's dishes cast into this receptacle. The active decomposition going on in this pestiferous hotbed engendered an atmosphere that, once inhaled, satisfied the most sceptical on board of its noxious character. The remedy applied was prompt and successful. Plugs were opened to let in a deluge of sea water, and which was immediately cleared out by powerful pumps. A few hours sufficed for this cleansing operation; simultaneously with which the men carried aloft and spread out their traps: decks and sides were washed down and scrubbed, hold fumigated, fires burnt, and hot shot placed below. His lordship was pleased to adopt my suggestion to have the sick, capable of removal, put on shore under canvas, and the consequence was that a fever

which had assumed an alarming aspect disappeared as by a charm: a result attributable, in my opinion, to one physical condition, namely, the removal of the pollution from the ship's people.

Still do not let self-complacency mislead us. It rarely happens that one can so easily establish the subsisting connection between cause and effect as in the instance just related. I must revert, therefore, to the point where I left off discussing the sufficiency of my second proposition, to remove some of the doubts and difficulties that beset critical inquiries into the natural conditions which precede and provoke remittent epidemics.

All experience has, indeed, shown that the salubrity of the atmosphere in certain situations differs from that of others—and an experiment may be taken to have proved that the soil is the source, and putrefaction of animal and vegetable substances the process, that produce this difference in the state of the air. To discover the ultimate cause why putridinous exhalations are essentially morbidic will probably ever surpass our knowledge. Yet, although not cognizable by our senses, nor demonstrable by chemical analysis, we speak of this atmospheric state as of a *material*, since on its presence or absence depend the occurrence or non-occurrence of fever.

Here, consequently, as in some other etiological investigations, we must content ourselves with the statement of the mode of operation of marsh exhalations, and call this a cause; though, in logical strictness, it must be understood simply as an effect of a more remote agency. Such a cause, consequently, can be known and examined only through its effects, and these effects I have named and enumerated. In other words, we only know endemic influences by their properties and effects in relation to resulting agencies.

Perhaps we are now better able to discuss the questions

formerly asked, namely, are the sources whence camp fever spring of a different specific constitution from those giving rise to the varied forms of ordinary ague? And if so, whether it is useful, as respects military *hygiène*, to distinguish betwixt the agency of these sources?

But here interposes the difficulty, whence then the etiological distinction in the two sources of simple agues and complicated remittents? We know the former prevail in spring, a season most favourable to vegetable miasm; while in autumn, besides this exhalation, there are given out copiously miasmatic constituents in the destruction of myriads of insects, reptiles, birds, and quadrupeds, whose term of existence closes with the summer. Disorganized animal matter abounds usually in localities where putrescent vegetation is exposed to the corrupting influences of heat and moisture, so that in autumn there is no swamp the air in contact with which is un-impregnated with these mixed emanations. It is to this natural law we must ascribe the great and permanent mortality in particular circumstances—for instance, the slimy margins of river lands subject to tidal influence, marshes occasionally inundated by sea irruptions, whence the invariable occurrence of, and frightful insalubrity from, remittents of the marshy tracts along the Mediterranean shores, especially in the Papal and Tuscan territories. For this reason, too, intermittents are never found among the *pyrexia* that follow the ravages of war and of earthquakes. They are unknown around Ephesus.

Let me now assume the truth of the facts and inferences just stated in order to value their bearing on military *hygiène*. If the fact of local pollution, as one great source of fever, were recognised, and the importance of its destruction, or its escape from, inculcated authoritatively, it cannot be

doubted but that nine-tenths of the life-and-money-cost of war would be saved a nation. Any apprehension on my mind regarding the progress and issue of the actual campaign in the Dacian provinces is not caused by the potency of the enemy's fire-arms, but from my knowledge of the military indifference to medical counsel which has been too often shown. Even when this disposition may not be lacking, strategic necessity may compel a disregard of sanitary measures whose utility is acknowledged. It is reckoned—*absit omen*—that Russia lost sixty or seventy thousand men by disease alone in her progress from the Pruth to Adrianople in 1828 and 1829. How grand then the mission of the medical man on foreign service. It is his privilege to teach that, though man may not moderate the violence of the deadly harmattan, he can turn himself aside from the pathway of its deadly blast—that though science cannot annihilate the elements that form nitric acid, yet it may modify their commixture to the proportions of common air: that the atmosphere of the *grotto del cane* is destructive to the quadruped, it is innocuous to the erect man. The medical records of both services furnish a thousand observations to justify the physician in asserting that the sphere of a malignant form of remittent fever may very probably be confined to a tainted district, even if the presence of the diseased contribute in some measure to its extension; in other words the general officer may fix boundaries to its range. In fine, modern science furnishes many striking facts for the unobtrusive intelligible teachings and warnings of the soldier in every day discourse on the part of the medical officer, and my belief is that he will encounter fewer difficulties in the applications of his doctrines than his predecessors did; and this, not more because of his own superior philosophical acquirements, than because of the

recent large and sound teachings of the public press in respect of the health of towns bill and the like.

Bearing in mind the aim and opportunity of this memoir, I am constrained to indicate opinions, contented if they provoke controversy, rather than state the accumulated evidence of their complete truth. For this reason, in what has gone before, I have done little more than cast doubt over one well received doctrine of the schools, namely, that both intermittent and remittent fevers arise alike from the common agency of a febrile miasm; the product of vegetable and animal decomposition only varying in its effects by degrees of concentration or other accidental modifications. Hence also, in passing on to a second point of etiological interest, I shall almost content myself with showing reason for denying another authoritative doctrine, namely, that the remote cause of camp fevers can be reduced to the operation of one and the same miasm, or febrile principle, in all cases; sometimes issuing from the effluvia of the living body, and sometimes from those of dead organized matter. In the first place, I am of opinion that human effluvia from healthy bodies, however numerous and congregated these are, if received into a pure air, are perfectly innocuous. Take the case of slave ships. In this traffic, hundreds of beings packed to a degree that suffocation has thinned their numbers, and not only their victims but their captors have escaped sickness under circumstances of all others the most prolific of living animal effluvia. Nor do I acquiesce in the commonly received teaching that these effluvia can by any self-change of simple concentration and stagnation acquire the property of generating fevers of a specific character. It is very certain that ample proofs might be adduced to show that there frequently co-existed all the conditions of crowded ill-ventilated ships, of densely peopled cantonments, be-

sieged garrisons, inattention to individual and aggregate cleanliness during considerable periods of hot wet weather without any manifestation of febrile disease. It may be supposed things are different in Turkish men-of-war now, than when I was in the Levant. I remember, on the capture of one of their frigates, that, on attempting to go below, I was seized with nausea and vertigo. The ship stank throughout as a charnel house. Yet there was not a case of fever on board, nor did one occur subsequently, though the wounded were many.

The observation of such like facts in the Levant convinced me of the impotency of human effluvia alone to generate febrile disorders, and the common explanation for such immunities from disease, namely, that the system of those exposed had become so inured to the febrile miasm as to be no longer susceptible to its impression, was, in the case stated, quite inapplicable, inasmuch as great numbers of the prisoners were received on board the captor—the prize was manned by a like number of Greeks, and in neither case did disease show itself. In fact, so strong is this negative testimony, that many medical writers affirm the total independence of even continued fevers of atmospheric influences, referring their sources of production and force of propagation to the specific infection of deceased bodies. This last conclusion appears to me also erroneous, for if causation be ever an admitted element of nosological classification, it is surely most important to recognize a specific distinction betwixt intermittents and remittents, as they are observed in the situations and under the conditions of their most ordinary prevalence. Of course, no one would deny that all fevers are made worse by the presence of the sick in crowded places, but then comes the question, wherefore and to what extent the aggregation of diseased bodies, *exclusive of infection*,

not only augments the productiveness of the paludal miasm, but likewise alters specifically the productiveness of the fever thence engendered? Strange that it should be still reserved for medical observation and philosophy to solve the problem, whether the *malaria* arising from the earth's surface, and producing only intermittent and remittent fevers, may, or may not, in certain circumstances and at certain times, excite fevers which take the continued form, and thereafter propagate their kind, as small-pox and measles do; and yet this problem of the *convertibility*, under given circumstances, of a decidedly non-contagious fever into one infectious—using the term conventionally in its restricted sense, as implying either contact or proximity—involves an inquiry of surpassing importance for the army medical officer. The question in its simplest form is this: Can one specific pyrexial disease have two modes of origin?

For its better elucidation, let me have recourse to a peculiarly appropriate example of this assumed rule of camp fever:—a marshy plain outside the fortress of Silistria, the scene of many fierce encounters in 1828, became covered and charged with carnage. Its surface ceased to produce its ordinary mild remittent fevers; but instead, one of a malignant character appeared, wherein an apyrexial interval was scarcely distinguishable. At a late, though proximate, period it was observed the hospital tents and sick hovels furnished a vast proportion of the deaths. The fever speedily acquired a more continued form; and, more fatal still, hospital attendants of all grades were scared from their duties—a panic, with its thousand-handed gripe, seized upon the troops: the presence of a veritable pestilence was proclaimed.

It was everywhere believed that a deadly poison was eliminated from diseased bodies, polluting the clothes, taint-

ing the breaths, infecting the persons of all whom chance or need brought into contact with them. This is a faithful outline of what once befell a Russian force on the very ground which British troops may occupy in parallel circumstances. Fever there will be, and many deaths the consequence. For the northern host there was no salvation in medical resources, nor was their absence grievously felt by the country. But with the western allies the science of the physician will be appealed to, and not in vain, to declare of the disease the true nature, source, and laws of increase,—to enforce efficient prophylactic measures against its insidious inroads, and to uphold the integrity of a belligerent force.

In accepting this perilous trust, will the army medical staff best sustain its responsibilities by denying or affirming the natural aptitude for one or a thousand, sick of ague, becoming the focus of typhus with its inherent attribute of infection? in other words, ought they to pronounce for the doctrine of so called *contingent contagion*, and solve the problem stated in the affirmative?

If this be the decision arrived at, I dare not say beforehand it will be an erroneous one; and yet it is incumbent on me to point out some difficulties in its way.

The term *contingent contagion* is one of modern medical phraseology, which, like many of its class, substitutes vagueness of speech for precision of thought. It is used to specify a disease that, arising from indigenous sources of organic putrescency, can, in its action on the living system, so affect certain secretions as to render them infectious. The operation of the primary morbid agency is, it is said, superseded by infection; that is, the malady that originated from general or local atmospheric pollution becomes propagated by contagion.

But the question is, has the body labouring under marsh fever the faculty of generating, by secretion, poison of the same morbid agency as the terrestrial pollution which it is supposed excited the primary disease? The supporters of this doctrine uphold the affirmative; and in doing so, assume a principle repugnant to all laws of etiological reasoning. They affirm that the same malady can be produced by two causes essentially different in their nature; in other words, that like effects may follow from dissimilar causes. The morbid qualities of emanations from *dead* organic matter are here identified with those of a specific infection from *living* bodies. But surely it is unphilosophical to say that a disease, originally excited by a combination of causes, of which contagion forms no part, can generate an infectious virus.

Emanations from putrid organic substances, and secretions from living bodies under disease, must possess, each, peculiar morbid properties. These properties should be distinguished therefore, according to their distinct sources; and their effects, in corresponding to these sources, must be dissimilar. They who assert that contagion is the first essential of cholera, hold a doctrine which is consistent with itself; but they who admit that noxious exhalations originally produce this disease, and at the same time contend that it is subsequently propagated by specific contagion, violate an established rule of philosophy; they have recourse to more causes than are sufficient to explain the phenomena. They unphilosophically maintain, apparently without perceiving the absurdity, that two poisons, essentially different in their nature, are capable of producing the same disease. I shall not further discuss the philosophical objection, though, to my mind, it is of itself completely conclusive against the hypothesis, that two altogether dissimilar effects can proceed

from one and the same cause. The rule, that similar causes produce similar effects, is, in my opinion, as absolutely true in respect of pathological conditions as of any other physical sequence.

I shall here only repeat my conviction, founded on some personal and much literary investigation of the subject, that vernal intermittent and autumnal remittent fevers, mild or malignant, of undoubted atmospheric origin, do not gradually acquire the property of being transmitted from body to body, or give rise to an agent capable of doing so.

But if it be asked, do I dispute the fact that fevers of an infectious nature have devastated camps? my reply is,—certainly not; my explanation of the fact is this—I believe, in the first place, that the infecting element must be imported into the locality by patients or persons who have been in recent close proximity with them; and, secondly, that where thus imported, it cannot propagate itself except through the *medium* of an atmosphere charged with miasmatic emanations. I contend for the existence of a two-fold agency, or rather, for the conjoint activity of two agencies: that fever becomes infectious from the presence of a foreign element, that this foreign poison cannot be extended through a pure air, but only through air made impure by putrescent organic exhalations. My hypothesis thus involves two conditions; one, that in every instance of a true infectious fever, a morbid matter is transmitted from a body labouring under its influence, or from substances impregnated with the pollution; the other, that the specific operation of this matter can be exerted only in an impure atmosphere: the effluvia thrown out by infected bodies furnish, it is true, seeds for fresh disease, but unless these find a proper soil for their reception, they do not germinate. The idea now advanced admits of easy comprehension and

proof. I have not had an opportunity to test its reasonableness on a large scale of camp fevers, but I have done so in respect of cholera during the epidemic of 1832, when I personally inspected, or was informed officially of the local conditions of several hundred cases.

Let me, in conclusion, beg that no reader will think I am unduly urgent on a right determination of the important question just mooted. That I am earnest, is because of a painful remembrance of a time and an emergency when I felt my own incompetence to advise. And let every military officer in Turkey reason himself to a conclusion on this subject, for he must anticipate the occasion when his decision must influence the health of a camp, and may compromise an army.

I proceed to the second head of these observations.

The remittent fever of the Levant appeared to me to present a very unmistakeable character and course. It has some features which distinguish it from the same named disease of the East and West Indies, not necessary to note here, for where seen they will be at once recognised. The assemblage of symptoms that bestows its specific name, marks also its pathognomic nature. The most prominent of these symptoms are, after a longer or shorter period of languor, restlessness, and sense of chill, intense headache, great nausea, vomiting, purging of blackish very fetid stools, urine scanty and dark, skin parched or soaked with fetid sweat, pulse small, quick, irregular, extreme prostration, pyrexical remissions and exacerbations hurried and obscure. It is seen these pathognomic signs group themselves round two great centres of living action—the sensorial and chylopoëtic systems. The only difference I noted in the fevers of Greece,

Egypt, Asia Minor, and Turkey, during three years of observation, seemed to depend rather on the habits and ages of those affected than on any essential pathological condition. I think there was less of serious gastric complication with the Turks, and more cerebral disturbance. Among other natives, Greek and Armenian, perhaps the opposite of these predispositions existed. It is more important to add, that I have seen the pyrexia sometimes partake of a typhoid cast, at others of an inflammatory from the first seizure. I have likewise seen the fever commence, and run a course of ten or twelve days, with little trouble to the physician, and, in the same locality and period, other cases that in the beginning resembled our home-bred continued fevers, and were of fatal issue, unless at an early stage a well marked remission took place, in which event the patient was usually saved.

While I believe in the existence of idiopathic fever that is not *caused* by local inflammation, and that the latter, when it does take place, is only an accompaniment or contingency, and not at all the essence of the disease, yet I must be allowed to say, that in my opinion the true nature—the proximate cause—of remittent fever is not properly appreciated, till the medical observer has long and closely studied the proofs which it furnishes of the presence of acute congestion of the mucous digestive surface at the very earliest stage of the attack in the vast majority of cases. It has been my lot to see the sudden aggravation of the disease in its middle period from improper diet or drugs, and a severe relapse from a like cause even during convalescence. When death resulted, I have detected previously unequivocal signs of the gangrenous destruction of the lining membrane of the stomach. In my day autopsy was forbidden, even in the medical schools of Constantinople, but I had afforded to me by Clot Bey, *chéf* of the Egyptian medical staff, many

opportunities of discussing with him, scalpel in hand, the then (1828) recently published doctrine of *gastro-ënterite*; and of convincing myself that till then my knowledge of the pathology of remittent fever was very dangerous. I am of opinion that Broussais and his disciples err in the exclusiveness of their pathology, the inertness of their therapeutics, but I also fear that the epithets bilious and bilious inflammatory, as frequently met with in English medical nomenclature, may lead to erroneous views of the nature and treatment of remittent fevers of Turkey. The liver unquestionably participates in and aggravates the general chylopoëtic disturbance, but this not more certainly than the kidneys, if the organic lesion of both viscera be judged of by their respective secretions during the continuance of the fever.

In this imperfect estimate and interpretation of the pathology of the remittent fever seen by me in the East, I only produce thoughts noted at the time for my own guidance; it is, consequently, my duty to avoid the air of positiveness. I know, too well, that the principles of all pathological diagnosis, in the true sense of this term, must be tested by experience. Hence, I seek to provoke discussion on the abnormal condition of the intestinal canal in remittent fever, by ranking it rather as a cause than a consequence of diseased action:—*lis adhuc sub judice est*—but even in practical medicine we are bound to allow that many propositions belong to the category of the disputable. And surely it is better that the mind be kept excited, even its doubts unresolved by antagonising propositions, than be stupefied by slavish empiricism through the bad habit of looking at the routine practice of medicine as our only safe guide. Our knowledge of the fact, that bark cures ague, is no excuse for indifference respecting the nature of the disease and the

mode of action of the remedy. And, for my part, I know of no disease where experience gives less license to carelessness of diagnosis at its first outbreak, as, indeed, also, where watching and inquiry are more necessary throughout its course, both individually and as an endemic.

I have at length arrived at the purpose and reward of this earnest endeavour to lessen one peril of the soldier's life in Turkey, by connecting, namely, the physical conditions and pathology of its remittent fevers with rational and successful modes of treatment.

Nevertheless, for me to attempt to specify the curative means applicable to the endemic, under all circumstances, would be impertinent and delusive. All I can venture upon is to indicate a few specialities observed and noted by myself, and to offer one or two conjectures regarding the practice which British medical officers will probably find most conducive for the recovery of the Europeans under their charge. Indeed, as one tome is needed to embrace the territorial conditions, various forms, modified symptoms, and frequent complications of this single group of fevers, so a second, would scarcely suffice to contain the multitudinous medical precepts and prescriptions for their treatment.

The nature of the disease in hand, such as it has been just described, as well as weight of authority, direct the practitioner's mind to certain ruling principles of action. He will strive, doubtless, to prevent, moderate, and remove active congestion in particular viscera; to maintain the vital powers, and impart energy to the vascular system; to preserve, or rather restore, when in abeyance, the apyrexial intervals. Means to fulfil these indications are crowded on his choice. And in the selection of the fittest for the first and main purpose, I predict the *modus operandi* of the English

and French regimental surgeon will be found to differ in important particulars; but in no respect will it be contrasted more than in the employment of the lancet at the beginning of the attack, and the exhibition of mercurials and active purgatives in its early stages. The latter will proceed, I know, with a proper respect for the doctrine of *gastro-entérite* and its prescriptions: the former, I fear, will regard the bilious inflammatory character—acute congestion of the liver—in too prominent a light, and bleed according to the state of the pulse. Now, general bleeding, and ten grain doses of calomel, and scruple doses of jalap, repeated again and again at intervals of a few hours, will not, I venture to say, prove so advantageous to British troops as to their antagonists. It certainly appeared to me, in the few instances where they were used, that general bleeding, mercurials and purgatives were more consonant to English therapeutic routine than consistent with the obvious pathology of the disease, or conducive to recovery. Whilst, therefore, I do not localize the seat and essence of ordinary remittent fever, exclusively in vascular congestion of the liver and mucous membrane of the stomach and bowels, I am of decided opinion that English practitioners cannot in its treatment safely disregard the facts and reasoning on which the Broussaian doctrines are founded. On the other hand, the Clutterbuck pathology, which generalises the proximate cause of marsh fever into primary disturbance, and subsequent lesion of the cerebro-spinal system, cannot be reconciled to its Eastern phenomena.

My notes of cases, it is true, show that I had need to be always on the alert to combat and subdue, as of chief importance, a morbid state, which I find variously called sensorial excitement, cerebral irritation, nervous excitability—next in order of importance, gastric irritation, and simul-

taneously, or immediately consecutive, great general debility —states altogether prohibitive of bleeding. Indeed, it may be said, generally natives and old foreign residents in Greece and Turkey did not require venesection; and the English travellers and seamen whom I have attended for the fever have had their systems too much reduced by fatigue or intemperate habits to admit any general depletion. In the fever at Macris, it assumed the malignant asthenic form in a great number of cases.

There was no one particular organic affection attendant upon, or characteristic of, this endemic, but in its duration different organs in different individuals became affected. In some the cerebral functions were chiefly disturbed, in others the liver and intestinal mucous membrane and their secretions greatly vitiated. Nevertheless, without being deceived by their seeming congestive or adynamic symptoms, with which the febrile attack was ushered in and attended in different cases, I had recourse to quinine, in full doses, at a very early period of its progress. (Be it noted, the drug had first to be procured by special courier from Smyrna.) My adjuvants were opium, infusion of *lauro-cerasus*, leeches, sinapisms, aperients very sparingly: the result was satisfactory.

Of one case, *me miserum*, I can speak feelingly, if not reason rightly. Having reached Ephesus from Macris, on an afternoon, July 1828, I rashly went down the same day to the saline marsh, in which all that remains of its ancient greatness lie or stand immersed. Before morning I knew I was in the gripe of the pestilence that walketh in darkness. A faithful English servant was my physician, nurse, and friend. I had sense now and then to tell him when and where to apply leeches and spongings, and fruits were my chief sustenance and physic for ten

days, when I could be borne through Magnesia to Smyrna to procure quinine, of which a few doses exercised its mysterious influence over the febrile paroxysms. My convalescence was, however, unusually protracted, probably caused by the too free use of leeches and extreme abstinence. And, speaking of my own case, egotism may be further borne, if I add that my experience of three years, and a close observation of other European travellers and residents throughout the Levant, convinced me for all time, that what in the West is held as moderate indulgence at table is hazardous there, and that an intemperate habit is sure death in the event of a febrile seizure. It is, moreover, my opinion that animal food may not be safely eaten as often and largely as Englishmen in particular hold themselves entitled to do. There is sense as well as triteness in the adage, to do at Rome as Romans do—and the precept is still more applicable to Turkey and its people.

My observations, as my experience, have been directed hitherto to those forms of paludal fevers, which are seen ordinarily in the Levant, afflicting equally strangers and natives, and which ought not to present any very formidable difficulty in respect to their treatment. The medical attendants, deplorably inefficient in numbers and ability, of the Greek and Russian armies in the Morea and Bulgaria, respectively (*tempore* 1827-28-29) encountered, as I have shown elsewhere, an outbreak of asthenic remittent, the mortality of which was truly frightful.

This is that type of camp fever which attacks troops fatigued by marches, and dispirited by defeat, against which even English soldiers have not always been proof—witness the campaign of Holland—with difficulty contesting every foot of ground amid carnage; the soil, wet—weather hot—rations scarce and irregularly served. I have been

told by surgeons engaged in both services, that in the treatment of those fevers, their only success was from the early and large use of quinine as soon as the stomach was brought to bear it, and for this purpose, opium, and other sedatives, were had recourse to, both prior to, and during its administration. For myself, when at Macris, I had to deal with a disease very closely resembling, if not identical with, that under consideration: a dry, dark loaded tongue did not deter me from prescribing quinine in a solid form. And I am very sure that hydrocyanic acid is not only compatible with, but highly auxiliary to, its employment. I gave no active purgatives by the mouth, even when the bowels were constipated; no diuretics, though the secretion of urine was sometimes very scanty. I had to choose between the possible mischief from congestion, and other abnormal action of one or more organs, and the positive evil of an interference which must postpone—and hours are life—the specific efficacy of a remedy that appears to me more than any other, to act upon the *materies morbi* of the whole frame. In a word, impressed with the truth of the etiological principles explained, and identifying pathological states with these, I reasoned that as quinine possesses a sovereign febrifuge quality in regard to one form of paludal fever, so it ought and will, in respect to all having the same source. And, consequently, my fixed idea and aim were to study and contrive means to hasten the moment for its tolerance by the stomach. My first combination to this end was its solution in an infusion of *lauro-cerasus*, and this did me good service. Afterwards, I was enabled to prescribe hydrocyanic acid, of a known strength, with more convenience, and equal efficacy. Camphor, opium, aromatics, were also duly combined for adjuvants. In addition to which, the skin received especial attention by frequent ablution, and orders to keep the body

as naked as possible during the febrile exacerbations. I have it noted that the opposition on the part of Mussulmans to this last particular, appear to lessen their chances of recovery.

These are notes and reminiscences I have some pleasure in going back to. Their present reproduction cannot supersede the necessity for much thought on the part of any one who may read them, though they may help its application.

With this last sentiment I might well conclude this summary of treatment, defective though it is in precision and development. The few details subjoined may, however, be excused if they serve as practical hints for troubled moments.

Bleeding.—Vascular depletion appeared to me only safe when practised to control acute congestion appearing in the progress of the fever. It required some watchfulness and a little sagacity to detect this tendency to local determinations, but much forbearance to wait for and anticipate their occurrence. I think I have seen the premature use of the lancet convert a remittent into a continued fever, wherein the early necessity for stimulants was produced, and by which the season for quinine was indefinitely and dangerously postponed. Nothing can, in my opinion, authorise profuse bleeding in fever, unless there be an equivocal inflammation of an organ revealed by the common characters that proclaim inflammation under other circumstances. My practice was to bleed for visceral congestion, as is done in other hyperæmic states of internal organs, and then, in nine cases out of ten, I found leeches most conducive to this end (thousands can be had for the cost of gathering in many parts of the Levant). I can vouch for the fact, that Greeks neither require nor bear the use of the lancet in this fever. An old medical friend

and sound bedside practitioner at Constantinople used to say, that for every ounce of blood taken from the arm at the commencement of it, an additional drachm of quinine had to be given towards the close.

Sedatives are a most valuable class of auxiliaries, and perhaps no one more so than hydrocyanic acid. In every form of gastric irritation, with or without pain, alone, and in varied combinations, its good will be acknowledged. Camphor and henbane, opium and ipecacuhana will be also advantageously thought of in head complications. To procure sleep is of great utility; opium alone for the purpose is objectionable. In this class I likewise include, and esteem highly, frequent cold or tepid spongings.

Cathartics.—My objections to the employment of active and frequent purgation have been sufficiently expressed, and I return to the point only to guard myself against being misunderstood. I fully recognise the fact, that excreted mucus when accumulated constitutes a local irritant, and that it may be retained from debility of the muscular fibre, and act injuriously upon the cerebral system. So reasoning, I had resort to occasional aperients during the latter stages of the disease, to preserve the proper functions of the mucous membrane. Calomel in one or two grain doses, the blue pill, or hydrargyrus cum cretâ, fulfilled this indication sufficiently well.

Emetics.—It increased my hope of recovery to see a patient sufficiently early for prescribing ipecacuanha; but this remedy could not be used with Turks, from their abhorrence of vomiting. Given in the precursory stage, they sometimes appeared to destroy the attack, and at all times to abate its violence and duration. The practice, I believe sound, albeit empirical.

Quinine has been highly extolled in the preceding pages,

but not more so than its virtues merit. In prescribing it my practice was to conjoin it with one or more drugs intended to subdue incidental or concomitant symptoms adverse to its use, as, hydrocyanic acid, camphor, henbane, opium. This mode of proceeding wins opportunities for its earlier use; it also enables one to persist in its administration, in spite of nausea, vomiting, purging. Full doses produced a slight, if any, general stimulating effect, and most rarely cerebral excitability. On the contrary, they were followed by a powerful and lasting sedative impression. Of course it is very important that the drug should be taken either before local irritation or congestion, hepatic or intestinal, has taken place; but when this may not be, then I qualified my prescription as above stated. I did not regard mere nervous excitement a bar to its use. Indeed, I came to doubt its generally supposed physiological excitant effects, and my conclusion was, that where quinine disappoints our expectations, the miscarriage is to be ascribed rather to some error in using it, than to the failure of specific virtue in the drug itself.

A single paragraph suffices for stimulants and counter-irritants, inasmuch as their use must be left entirely to the discretion of the practitioner. For myself, I gave the one very sparingly, the other I applied freely.

To conclude, the army surgeon and physician have at their command many grand resources which the civil practitioner does not possess—they seize the disease at its commencement. During its course they can assure themselves of obedience and all that relates to diet, medicine, cleanliness, and other external conduct of the case. Cost does not enter into their calculations. Consultations with colleagues, the co-operation of an organised system of admirable structure, are all auxiliaries to success. Knowing something of these

advantages, of the unbounded liberality with which all needful supplies have been furnished for the Turkish expedition, and of the spirit that actuates the chief of the medical department of the army, I am bold to predict that our military history will not have to record, and the country deplore, a second Walcheren.

Ludlow, May 1854.

EXTRACTS SHOWING
THE
PROPHYLACTIC INFLUENCE OF QUININE.
BY
ALEXANDER BRYSON, M.D., R.N.

TWENTY men and one officer were employed on shore for one day at Sierra Leone; to the former, bark mixed with wine was given; but the latter refused to take it. He was the only person of the whole party who was subsequently attacked with fever.* Again, two boats' crews were detached from the *Hydra*, to examine the river Sherbro. They remained away a fortnight, and, during the whole time, took bark and wine, as directed by the instructions; yet, though the locality is a most dangerous one, not one case of fever followed; but another boats' crew, who were absent for two days only, in the same locality, and at the same time, who did not take bark, were all attacked, except the officer in command of the boats.

Dr. Bryson suggested that "quinine being less nauseous than bark, and therefore less likely to be refused by seamen, should be used as a prophylactic instead of the latter, and that its use should be continued, not only while the men were exposed in unhealthy localities, but *for at least fourteen days after they returned on board*, in order that the antagonistic influence of the medicine might be kept up until the incubative period of the disease had expired."† The sug-

* Report on African Station, p. 49.

† Report on African Station, p. 219.

gestion was adopted, and the results, upon the whole, are most satisfactory.

A strong, spirituous solution of amorphous quinine was mixed with several pipes of wine, in the proportion of four grains of the salt to an ounce of the wine; a number of cases, or boxes, was then made, capable of holding a certain number of bottles; these, on being filled with the medicated wine, one or two boxes, according to the size of the vessel, were supplied to each cruiser employed on the African station. The object in supplying the cruisers with medicated wine-chests was, that they might at all times be ready and at hand to put into boats suddenly required to proceed on detached service. Thus the quinine—which, when carried in paper, or bottles, was not only apt to be lost or blown away, but had to be given in uncertain doses, and therefore could not be husbanded—was secured, and the wine was effectually destroyed for any other purpose. Instructions for the administration of the wine according to the above plan were placed in each box, and the medical officers were requested to note and report on its effects. The following extracts will show the estimation in which it is held by the medical officers on the African station:—

“I found bark and rum given to the men going away on duty of the greatest benefit; but, from the bulk of the bark, and the small quantity of the rum, if the men were not watched closely, they would not take the draught at all. All that could be desired is now obtained in the medicated wine.”*

“Eighteen men were detached in the pinnace and whaler to cruise off Banda Point and Mayamba Bay, in the months of February and March. They were absent for twenty-four days. I directed an ounce of quinine wine to be given daily to each person, and it is satisfactory to state that no sickness whatever occurred.”†

“Two boats’ crews have been constantly on detached service, close in shore, where the effluvium, wafted from the

* Dr. J. Walsh.

† Thomas Pickthorn, Esq., Assistant-Surgeon.

land by the morning breeze, is very offensive, and highly pregnant with the odour of decomposing vegetable matter. The immunity from disease of those engaged in this service, I attribute chiefly to the regular use of quinine wine and bark, together with protection by good awnings.*

"The boats remained in the Pongas one night, and the crews — officers and men amounting to twenty-four in number — were exposed to the sun the greater part of two days. Quinine wine was given in ounce doses for eight days afterwards, and I attribute the exemption of the greater part of the people from fever to its use."†

It may be stated, that these extracts afford no proof of the preventive influence either of bark or quinine beyond the opinion expressed by the several reporters; but when taken in connection with those which follow, they appear in a different light, and form a kind of presumptive evidence which cannot well be rejected.

"During the time the boats were up the Scarcies, I gave an ounce of the solution of quinine to each man daily, and continued it for ten days afterwards; and, although the rains were commencing, and the men were often wetted through, I had not a case of illness."

"The boats were frequently away cruising in the mouths of rivers, or else blockading the coast between Delagoa Bay and Mozambique. I had frequent opportunities of observing the prophylactic effect of the quinine wine. In only one instance did fever follow its use, and that was of a mild character. This contrasts strongly with the seizure of a whole boat's crew with fever in March 1851, when no wine was administered, as it was lost in crossing the bar of the river. The men greatly prefer it to the bark."‡

"The gig was detached in the Boom-kittam; quinine wine, in the usual dose, was given night and morning, and continued for fourteen days after its return. A boy (Wm. Roberts), from dislike to the quinine, took at most but

* William Webber, Esq.

† Mr. Beaumont.

‡ J. A. Corbett, Esq.

three doses. He was the only one of the boat's crew that suffered from fever, which occurred ten days after leaving the river."*

"While coaling at Sierra Leone, the weather was very wet, and on their several duties both men and officers were unavoidably much exposed to the rain. An extra allowance of grog and quinine was given to each man, and continued afterwards for a day or two to such as seemed to require it. Mr. —, however, placed no faith in its preventive influence, and would not take it, and he alone suffered an attack of fever, which proved fatal."†

"A boat's crew, belonging to the *Pluto*, were employed for twenty-five days up the Congo. The wine was regularly supplied, but it caused one of the men to vomit, and therefore he discontinued its use; he was the first to suffer from fever. Only one other case occurred among the crew.

"During our stay in the river Lagos quinine wine was regularly offered to the men morning and evening,—all took it, I believe, except two midshipmen and two seamen belonging to the galley. These four persons subsequently each suffered a severe attack of fever."‡ While, in the whole force, consisting of upwards of 220 men, there occurred only a few other cases of trifling importance.§

"When in the river Lagos the men had more than an ounce of quinine wine morning and evening, and not a case of fever occurred, though the vessel was nine days in the river.||

"Thirty-six men belonging to the *Water Witch* were employed at the attack on Lagos; they were in the river four or five days, and, with the exception of three, all took quinine wine while there, and for fourteen days after they left it. Of the whole number, five only were attacked with fever, namely, the three men who did not take the wine, and other two, who most imprudently exposed themselves to the sun, and bathed while much heated by violent exercise."¶

* Return from *Teazer*, March 1853.

† A. Sibbald, Esq.

‡ Mr. Heath, Surgeon.

§ Mr. Carpenter.

|| Journal of the *Teazer*.

¶ J. Henderson, Esq., M.D.

"On the morning of the 25th of November, seventy-seven men from this ship went up the river Lagos, to attack the town. Before starting, every officer and man was ordered to take a glass of quinine wine; and a sufficient quantity was put into the boats to repeat the same at night. All, to the best of my knowledge, took it, with the exception of Mr. D., master's assistant, who rather plumed himself on having escaped *taking a dose of physic*. This young gentleman, on the 10th of December, just a fortnight after, was seized with a violent attack of remittent fever: and of the whole number who entered the river, he is the only one who, up to this date (the 7th of Jan.), has been attacked."*

* F. Stupart, Esq. Surgeon.

EXTRACT

FROM THE MEDICAL AND SURGICAL REPORT

OF

MR. DRUMMOND,

Deputy Inspector of Melville Hospital, Chatham, between 1st January and 31st March, 1854.

"I have also to notice that in two cases of most intractable quotidian ague, which had for several months resisted every mode of treatment; I had at last recourse to the use of strychnine, and had the satisfaction to witness both my patients freed from ague in ten days from the commencement of the new remedy.

"The dose was the one-twelfth of a grain, increased to an one-eighth three or four times a day. Both patients have been well for two and three months, and continue so."

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